

ACIDIC PRECIPITATION IN ONTARIO STUDY

**CUMULATIVE (28 DAY) PRECIPITATION CHEMISTRY LISTINGS
JANUARY 2, 1985 - DECEMBER 31, 1985**

**Atmospheric Processes Studies Unit
Air Quality and Meteorology Section
Air Resources Branch
Toronto, Ontario
Canada, M5S 1Z8**

**JANUARY 1987
ARB-002-87-AQM**

**A.P.I.O.S. Coordination Office
Ontario Ministry of the Environment
6th Floor, 40 St. Clair Ave. W.,
Toronto, Ontario
Canada, M4V 1P5**

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ACKNOWLEDGEMENTS

This report was prepared by Diane Green of the APIOS Atmospheric Deposition and Chemistry Program. However, the data themselves are a product of the combined efforts of many individuals. Precipitation samples were collected by a large number of site operators, whose names cannot be individually mentioned here, under the coordination of the APIOS environmental technicians Scott Kennedy (in Southwestern Region), Steve Elliott (in Southeastern Region), Wim Smits (in Northwestern Region), Jeff Columbus (Northeastern Region) and J.P. Varto (in Central Region). Sample handling was carried out by Dan Orr and Errol Butler, and overall network coordination by Bill Bardswick of the Air Resources Branch. Chemical analyses were performed at the Laboratory Services Branch under the coordination of Frank Tomassini and Barry Loescher. Invaluable clerical and computer assistance were provided by Koshy Mathew and William Chang respectively, of C.C and C. Computer Systems Inc. All enquiries regarding the reported data should be directed to Neville Reid, Coordinator, Atmospheric Deposition and Chemistry Program, at (416) 965-1634.

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| PART III | SOUTHWESTERN REGION CUMULATIVE PRECIPITATION CHEMISTRY LISTINGS | |

| <u>Station Name</u> | <u>Map Ref. No.</u> | <u>Page</u> |
|---------------------|---------------------|-------------|
| Alvinston | 05 | 1 |
| Colchester | 01 | 4 |
| Huron Park | 06 | 7 |
| Merlin | 02 | 10 |
| Palmerston | 08 | 13 |
| Port Stanley | 03 | 16 |
| Shallow Lake | 09 | 19 |
| Waterloo | 07 | 22 |
| Wilkesport | 04 | 25 |

| | | |
|---------|---|--|
| PART IV | CENTRAL REGION CUMULATIVE PRECIPITATION CHEMISTRY LISTINGS | |
|---------|---|--|

| <u>Station Name</u> | <u>Map Ref. No.</u> | <u>Page</u> |
|---------------------|---------------------|-------------|
| Campbellford | 13 | 28 |
| Coldwater | 12 | 31 |
| Dorset | 20 | 34 |
| Uxbridge | 11 | 40 |
| Wilberforce | 18 | 43 |

| | | |
|--------|--|--|
| PART V | SOUTHEASTERN REGION CUMULATIVE PRECIPITATION CHEMISTRY LISTINGS | |
|--------|--|--|

| <u>Station Name</u> | <u>Map Ref. No.</u> | <u>Page</u> |
|---------------------|---------------------|-------------|
| Cloyne | 14 | 46 |
| Dalhousie Mills | 16 | 49 |
| Golden Lake | 17 | 52 |
| Smith's Falls | 15 | 55 |

**PART VI NORTHEASTERN REGION CUMULATIVE
PRECIPITATION CHEMISTRY LISTINGS**

| <u>Station Name</u> | <u>Map Ref. No.</u> | <u>Page</u> |
|---------------------|---------------------|-------------|
| Moosonee | 38 | 58 |
| Azure Lake | 26 | 61 |
| Bear Island | 24 | 64 |
| Gowganda | 25 | 67 |
| Killarney | 23 | 70 |
| Mattawa | 22 | 73 |
| McKellar | 21 | 76 |
| Moonbeam | 27 | 79 |
| Turkey Lake | 37 | 82 |
| Whitney | 19 | 85 |

**PART VII NORTHWESTERN REGION CUMULATIVE
PRECIPITATION CHEMISTRY LISTINGS**

| <u>Station Name</u> | <u>Map Ref. No.</u> | <u>Page</u> |
|---------------------|---------------------|-------------|
| Dorion | 31 | 88 |
| Ear Falls | 35 | 91 |
| Exp. Lakes Area | 34 | 94 |
| Geraldton | 30 | 97 |
| Lac La Croix | 33 | 100 |
| Otter Island | 38 | 103 |
| Pickle Lake | 39 | 106 |
| Quetico Centre | 32 | 109 |
| Winisk | 29 | 112 |

PART I
INTRODUCTION

INTRODUCTION

The data listed herein are a summary of the results acquired from the APIOS cumulative precipitation sampling network from January 2, 1985 to December 31, 1985. The sampler utilized for collection of wet cumulative deposition is the M.I.C. Type "A" collector (Sangamo). During May to October when precipitation is mainly in the form of rain, the Sangamo collector is equipped with a 34 cm x 61 cm polyethylene bag insert. For snow and snow/rain collection from November to April, deeper collection vessels are utilized (122 cm) with 34 cm x 122 cm polyethylene bag inserts. The deeper collection vessel is utilized to reduce snow blow out. The period of accumulation per sample is 28 days.

All data presented in this report have been screened for validity. Remarks and qualifications have been appended to records, and/or results where necessary. The screening procedure involved checking each record for chemical analysis integrity (e.g. ionic balance, observed vs. theoretical conductance). Gross limits checks were applied to the results. Upper limits were determined as $M + 2S$ where median (M) and scale (S) represent robust estimates of mean and standard deviation respectively. Scale of the distribution was estimated from interquartile distance, i.e. $S=0.74$ (3rd quartile - 1st quartile) based upon logarithmically transformed results. In a situation where the distribution is significantly bounded by reported detection limits, S may be estimated as follows, $S=1.48$ (3rd quartile - 2nd quartile). Lower gross limits were specified by the above method except for those parameters with minimum values near or at the detection limits (Cl, Mg, K, Na, Ph, Mn, Ni, Pb, V, Al, Cu, Cd). For these parameters a lower gross limit of zero was utilized. The data were also screened for outliers statistically by applying the Dixon Ratio test to the highest and lowest values observed in each region on a monthly basis. Outliers were determined at the 95% level of confidence. Records and/or results deemed unreliable are flagged but not deleted. Detailed description of the validation procedures as applied to this data set is available from the Ministry upon request.

Station Identification

The station identification is defined by four descriptive fields (e.g., Dorset/Cumulative/Wet #20). The first field refers to the sampling location. The second and third fields describe the sampling interval and the sampling type (e.g., wet or dry) respectively. The last numeric field refers to the index code utilized on the location map. All precipitation chemistry listings are given in alphabetic order by station name within each region.

Cumulative Precipitation Chemistry Listings

Sample type, as coded in the data listings, represents the state of the collected sample at time of removal. The sample date represents the date on which the sample was removed from the sampler. All chemical analyses were done on unfiltered samples. Lab pH entries represent pH measurements obtained at the MOE Laboratory in Toronto.

Total hydrogen ion concentration is reported for both titration of the sample with NaOH to an end point pH of 8.3 and gran analysis titration. For a complete outline of lab analytical methodology please consult the Ontario Ministry of the Environment report "Outlines of Analytical Methods" coordinated by Water Quality Section, Laboratory Services Branch, June 1981.

Of the reported metals, aluminum, copper, iron and zinc were found to display significant adsorptive losses. As a result, a leach solution of 5% HNO₃ (1 litre) is placed in the emptied collection bag for 24 hours. The leach solution is then analysed for the above metals and a final metal concentration is then calculated. In the calculation of final metal concentration, if a detection limit is encountered, a value corresponding to one half the detection limit is utilized.

Co-located with each sampler is a cumulative precipitation gauge which serves as a primary standard of precipitation during the collection period. However, if the cumulative gauge depth is missing or is thought to be inaccurate, then an approximate precipitation depth is determined. The approximation is made by accumulating the surrounding CLIMAT* station daily depth gauge results individually and then interpolating using a modified kriging method (1) to the APIOS station. Sometimes precipitation gauge results could not be calculated by the above method, in which case the data are missing in the tables to follow.

Calculation of Equivalent Precipitation Depth (mm)

$$\text{Equivalent Precipitation Depth (mm)} = \frac{\text{Volume Collected (ml)} \times 30.8}{1000}$$

Calculation of Observed Sampling Efficiency

$$\% \text{ Efficiency} = \frac{\text{Equivalent Precipitation Depth (mm)} \times 100 \%}{\text{Gauge Depth (mm)}}$$

Field Comment Code Index

- A - Insects in sample
- B - Leaves in sample
- C - Particulates in sample
- D - Fibres in sample
- E - Sample not submitted
- F - Sampler malfunctioned
- G - Sample spilled or leaked
- H - Volume incorrect
- I - Event(s) missed
- J - Wet side open when not precipitating
- K - No precipitation collected
- L - Part of event missed
- M - Dry side open when precipitating
- P - Gauge depth incorrect
- Q - Other

* Environment Canada, Atmospheric Environment Service Meteorological Observations in Eastern Canada, Monthly Record

(1) Spatial Trend Analysis and Uncertainty Estimates of Acid Deposition Data in Ontario, A.J.S. Tang and W.H. Chan, reprint #85-6A.6, 78th Air Pollution Control Association Annual Meeting, Detroit, Michigan, June 16-18, 1985.

Office Comment Code Index

- C - calculated/observed conductance discrepancy
- H - calculated/observed pH discrepancy
- J - Δ pH large
- M - poor ionic balance
- N - abnormal sampler efficiency
- T - free hydrogen exceeds total hydrogen
- X - sample lost

Analytical Result Remark Code Index

- > - actual result greater than value reported
- < - actual result less than value reported
- T - actual result less than criterion of detection
- W - no response, minimum possible result reported
- A - approximate value
- U - unreliable result
- L - bag leach result not available
- L - bag leach result not available and precipitation sample result has been reported as a detection limit
- LG - exceedance of lower gross limit checks
- UG - exceedance of upper gross limit values
- D - outlier of Dixon Ratio Test
- B - exceedance of gross limit checks and outlier of Dixon Ratio Test

PART II

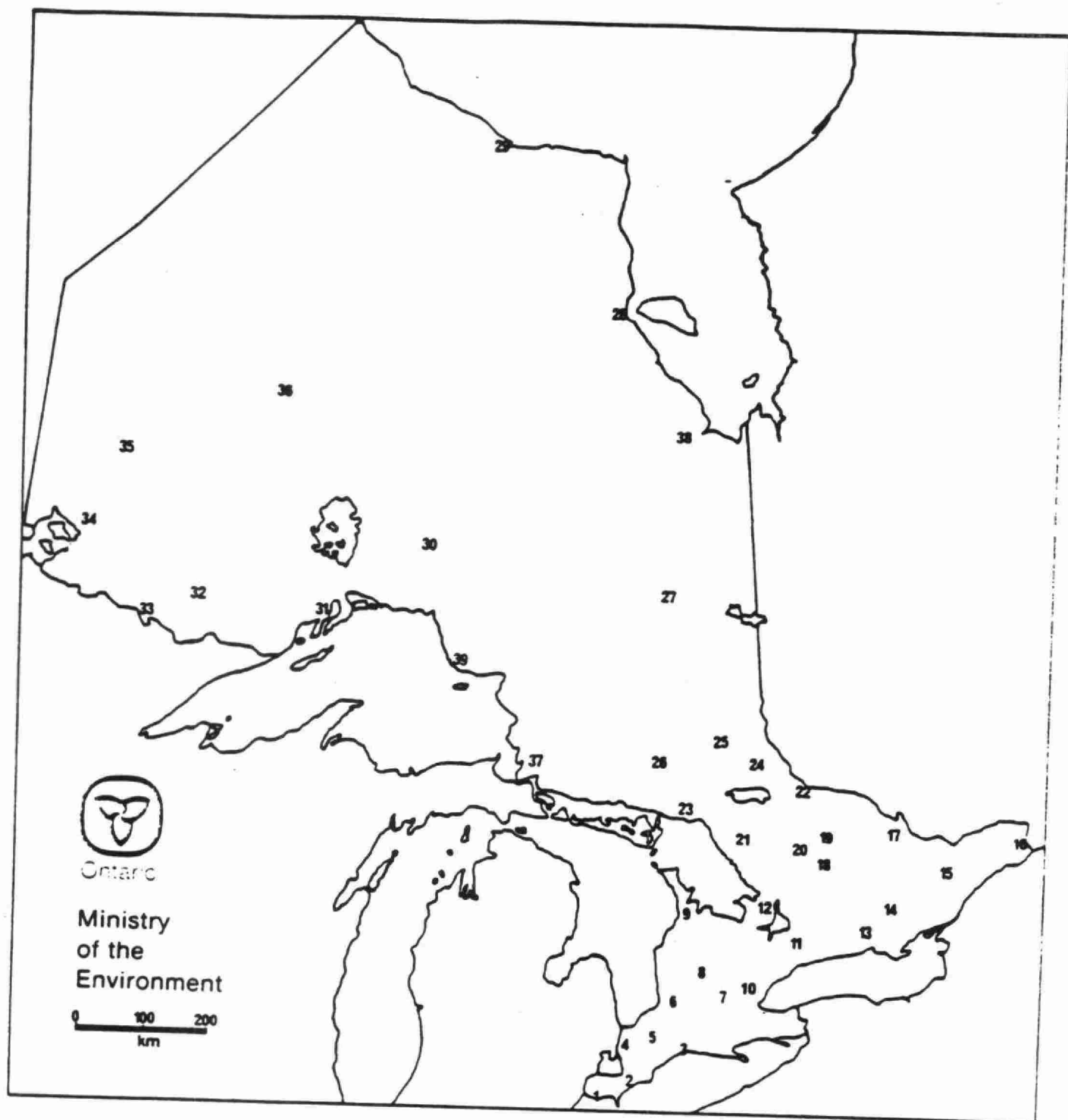
STATION DESCRIPTION AND LOCATION MAP

TABLE 1

APIOS CUMULATIVE WET/DRY DEPOSITION NETWORK SITE DESCRIPTIONS

| MOE REGION | STATION NAME | STATION NUMBER | INSTRUMENTATION | ELEVATION (m above MSL) | LATITUDE (North) | LONGITUDE (West) | UTM GRID CO-ORDINATES (Northing) (Easting) | |
|--------------|-----------------|-------------------|--------------------|----------------------------|---------------------|---------------------|---|--------|
| Southwestern | Colchester | 1041 | MIC/Low-Volume Air | 183 | 41°59'15" | 82°55'41" | 4850000 | 340300 |
| | Merlin | 1051 | MIC | 191 | 42°14'47" | 82°13'30" | 4876400 | 398950 |
| | Pt. Stanley | 1061 | MIC/Low-Volume Air | 213 | 42°40'22" | 81°09'55" | 4724050 | 488700 |
| | Wilkesport | 1071 | MIC/Low-Volume Air | 183 | 42°42'11" | 82°21'13" | 4728350 | 389150 |
| | Alvinston | 1081 | MIC | 221 | 42°49'36" | 81°50'04" | 4942000 | 431550 |
| | Shallow Lake | 1091 | MIC/Low-Volume Air | 229 | 44°34'54" | 81°05'24" | 4936200 | 492850 |
| | Palmerston | 1101 | MIC/Low-Volume Air | 389 | 43°48'19" | 80°54'12" | 4850050 | 507750 |
| | Huron Park | 1191 | MIC | 250 | 43°17'28" | 81°30'03" | 4793000 | 459350 |
| | Waterloo | 2021 | MIC | 343 | 43°28'39" | 80°35'09" | 4813750 | 533500 |
| | Dorset | 3011 | MIC/Low-Volume Air | 320 | 45°13'28" | 78°55'52" | 5009850 | 662400 |
| Central | Milton | 3051 | MIC | 221 | 43°31'05" | 79°55'54" | 4818600 | 586350 |
| | Uxbridge | 3061 | MIC/Low-Volume Air | 244 | 44°12'46" | 79°12'38" | 4896800 | 643000 |
| | Wilberforce | 3071 | MIC | 396 | 45°00'54" | 78°12'58" | 4988150 | 719400 |
| | Campbellford | 3081 | MIC/Low-Volume Air | 175 | 44°17'28" | 77°47'33" | 4907600 | 277150 |
| | Coldwater | 3101 | MIC | 280 | 44°37'31" | 79°32'08" | 4942200 | 615900 |
| Southeastern | Kaladar | 4051 | MIC/Low-Volume Air | 244 | 44°41'31" | 77°09'18" | 4950800 | 329250 |
| | Smith's Falls | 4061 | MIC/Low-Volume Air | 122 | 44°56'41" | 75°57'48" | 4977100 | 423950 |
| | Dalhousie Mills | 4071 | MIC/Low-Volume Air | 69 | 45°19'00" | 74°28'13" | 5018100 | 541550 |
| | Golden Lake | 4081 | MIC/Low-Volume Air | 160 | 45°36'48" | 77°12'03" | 5053200 | 328400 |
| | Cloyne | 4091 | MIC/Low-Volume Air | 259 | 44°49'09" | 77°11'45" | 4964750 | 327100 |
| Northeastern | McKellar | 5011 | MIC/Low-Volume Air | 244 | 45°30'57" | 79°55'19" | 5040600 | 583950 |
| | Killarney | 5021 | MIC/Low-Volume Air | 183 | 45°59'26" | 81°29'18" | 5092900 | 462200 |
| | Mattawa | 5031 | MIC/Low-Volume Air | 198 | 46°16'45" | 78°49'19" | 5127150 | 667800 |
| | Bear Island | 5041 | MIC | 305 | 46°58'22" | 80°04'40" | 5202400 | 570350 |
| | Ramsey | 5051 | MIC | 427 | 47°26'33" | 82°20'14" | 5254900 | 399200 |
| | Gowganda | 5061 | MIC/Low-Volume Air | 343 | 47°39'04" | 80°46'32" | 5277300 | 516600 |
| | Moonbeam | 5071 | MIC/Low-Volume Air | 244 | 49°19'16" | 82°08'46" | 5463600 | 416650 |
| | Attawapiskat | 5081 | MIC/Low-Volume Air | 9 | 52°56'00" | 82°24'00" | NA | NA |
| | Whitney | 5091 | MIC | 412 | 45°32'21" | 78°15'35" | 5045950 | 713950 |
| | Turkey Lake | 5141 | MIC/Low-Volume Air | 472 | 47°03'15" | 84°24'00" | 5214250 | 696750 |
| Northwestern | Azure Lake | 5151 | MIC | 244 | 47°28'12" | 81°52'30" | 5257650 | 434250 |
| | Moosonee | 5161 | MIC/Low-Volume Air | 8 | 51°12'34" | 80°42'20" | 5673000 | 520550 |
| | Dorion | 6011 | MIC/Low-Volume Air | 244 | 48°50'33" | 88°36'45" | 5410800 | 382150 |
| | Nakina | 6021 | MIC/Low-Volume Air | 320 | 50°10'38" | 86°42'00" | 5558150 | 520950 |
| | Bar Falls | 6031 | MIC/Low-Volume Air | 350 | 50°38'31" | 93°13'13" | 5609800 | 484150 |
| | Pickle Lake | 6041 | MIC/Low-Volume Air | 360 | 51°27'41" | 90°12'04" | 5704800 | 694550 |
| | Lac la Croix | 6061 | MIC | 368 | 48°21'14" | 92°12'32" | 5355900 | 558400 |
| | Quetico Centre | 6071 | MIC/Low-Volume Air | 420 | 48°44'24" | 91°12'08" | 5399750 | 632100 |
| | E.L.A. | 6091 | MIC | 123 | 49°39'22" | 93°43'28" | 5500950 | 447350 |
| | Winisk | 6101 | MIC | 9 | 55°12'00" | 85°08'00" | NA | NA |
| | Otter Island | 6111 | MIC/Low-Volume Air | 204 | 48°06'50" | 86°04'25" | 5328750 | 569500 |
| | Geraldton | 6121 | MIC/Low-Volume Air | 351 | 49°48'05" | 86°46'00" | 5516300 | 516750 |

FIGURE 1
LOCATION OF APIOS CUMULATIVE WET/DRY DEPOSITION NETWORK SITES



- | | | |
|---------------------------------|-------------------------------|---------------------------------|
| 1. Colchester* | 15. Smith's Falls* | 29. Winisk |
| 2. Merlin | 16. Dalhousie Mills* | 30. Geraldton* |
| 3. Pt. Stanley* | 17. Golden Lake* | (replacing Nakina, August 1983) |
| 4. Wilkesport* | 18. Wilberforce | 31. Dorion* |
| 5. Alvinston | 19. Whitney | 32. Quetico Centre* |
| 6. Huron Park | 20. Dorset* | 33. Lac la Croix |
| 7. Waterloo | 21. McKellar* | 34. Experimental Lakes Area |
| 8. Palmerston* | 22. Mattawa* | 35. Ear Falls* |
| 9. Shallow Lake* | 23. Killarney* | 36. Pickle Lake* |
| 10. Milton (removed March 1984) | 24. Bear Island | 37. Turkey Lake* |
| 11. Uxbridge* | 25. Gowganda* | 38. Moosonee* |
| 12. Coldwater | 26. Azure Lake | (installed October, 1985) |
| 13. Campbellford* | (replacing Ramsey, June 1983) | 39. Otter Island* |
| 14. Cloyne* | 27. Moonbeam* | (operated only during "summer" |
| (replacing Kaladar, June 1983) | 28. Attawapiskat | periods) |
| | (removed February 1984) | |

* indicates both a dry and wet deposition network site

PART III

SOUTHWESTERN REGION

CUMULATIVE PRECIPITATION CHEMISTRY LISTINGS

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : ALVINSTON/CUMULATIVE PRECIP.

#05

PAGE : 1

| REMOVAL DATE | EXPOSURE DATE | SAMPLING START HR. | SAMPLING END HR. | SAMPLE TYPE 01-RAIN 02-SNOW 03-COMP/04-OTHER | GAUGE DEPTH(MM) | GAUGE TYPE 02,03-APIOS 09-AES | SAMPLE NUMBER | PROJECT CODE 02-APIOS 03-SPECIAL | SUBPROJECT CODE 01-MOE 03-AES | SAMPLER EFFICI- ENCY (%) | COMMENTS FIELD OFFICE |
|-----------------|------------------|--------------------------|------------------------|--|--------------------|--|------------------|---|--|-----------------------------------|--------------------------|
| JAN 29,85 | JAN 2,85 | 800 | 1430 | 2 | 25.0 | 2 | 19760 | 2 | 1 | 95 | |
| MAR 5,85 | JAN 29,85 | 1430 | 830 | 3 | 156.0 | 2 | 19790 | 2 | 1 | U 55 | 8 |
| MAR 26,85 | MAR 5,85 | 830 | 830 | 3 | 29.0 | 2 | 19811 | 2 | 1 | 58 | |
| APR 23,85 | MAR 26,85 | 830 | 1245 | 3 | 84.0 | 2 | 19837 | 2 | 1 | 65 | |
| MAY 21,85 | APR 23,85 | 1245 | 1245 | 1 | 30.0 | 3 | 19849 | 2 | 1 | 106 | AC |
| JUN 18,85 | MAY 21,85 | 1245 | 1400 | 1 | 61.0 | 3 | 19884 | 2 | 1 | 92 | |
| JUL 18,85 | JUN 18,85 | 1400 | 1200 | 1 | 54.0 | 3 | 19906 | 2 | 1 | 94 | AC |
| AUG 14,85 | JUL 18,85 | 1400 | 1130 | 1 | 60.0 | 3 | 19930 | 2 | 1 | 86 | A |
| SEP 10,85 | AUG 14,85 | 1130 | 1130 | 1 | 161.0 | 3 | 19952 | 2 | 1 | 90 | AC |
| OCT 8,85 | SEP 10,85 | 1130 | 1100 | 1 | 19.0 | 3 | 19974 | 2 | 1 | 89 | CD |
| NOV 5,85 | OCT 8,85 | 1100 | 1130 | 1 | 130.0 | 3 | 19984 | 2 | 1 | 95 | BC |
| DEC 3,85 | NOV 5,85 | 1130 | 1200 | 3 | 93.0 | 3 | 74018 | 2 | 1 | U 51 | CG |
| DEC 31,85 | DEC 3,85 | 1200 | 1100 | 2 | 45.0 | 3 | 74054 | 2 | 1 | 62 | |

| REMOVAL DATE | EXPOSURE DATE | VOLUME ML | CONDUCT. UMHO/CM | PH LAB | TOTAL H+ GRAN MG/L | SULPHATE MG/L | NITRATE AS N MG/L | CALCIUM MG/L |
|-----------------|------------------|--------------|---------------------|-----------|--------------------------|------------------|-------------------------|-----------------|
| JAN 29,85 | JAN 2,85 | 773.0 | 21.0 | 4.54 | 0.0557 | LG 1.25 | 0.61 | 0.44 |
| MAR 5,85 | JAN 29,85 | 2833.0 | 26.5 | 4.39 | 0.0713 | 2.25 | 0.49 | 0.44 |
| MAR 26,85 | MAR 5,85 | 550.0 | 38.8 | 4.18 | 0.0984 | 3.05 | 0.78 | 0.46 |
| APR 23,85 | MAR 26,85 | 1781.0 | 24.6 | 4.50 | 0.0617 | 2.85 | 0.47 | 0.57 |
| MAY 21,85 | APR 23,85 | 1034.0 | 53.8 | 4.07 | 0.1170 | 6.85 | 0.99 | 1.01 |
| JUN 18,85 | MAY 21,85 | 1823.0 | 35.4 | 4.27 | 0.0819 | 3.75 | 0.59 | 0.38 |
| JUL 18,85 | JUN 18,85 | 1660.0 | 41.5 | 4.19 | 0.0951 | 4.70 | 0.62 | 0.66 |
| AUG 14,85 | JUL 18,85 | 1682.0 | 38.2 | 4.23 | 0.0944 | 4.10 | 0.52 | 0.44 |
| SEP 10,85 | AUG 14,85 | 4740.0 | 38.2 | 4.13 | 0.0993 | 3.55 | 0.53 | 0.28 |
| OCT 8,85 | SEP 10,85 | 553.0 | 50.3 | 4.10 | 0.1120 | 5.95 | 0.84 | 0.94 |
| NOV 5,85 | OCT 8,85 | 4044.0 | 20.9 | 4.60 | 0.0492 | 2.55 | 0.37 | 0.78 |
| DEC 3,85 | NOV 5,85 | 1540.0 | 16.5 | 4.60 | 0.0503 | 1.55 | 0.29 | 0.20 |
| DEC 31,85 | DEC 3,85 | 910.0 | 38.0 | 4.20 | 0.1010 | 2.40 | 0.87 | 0.27 |

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : ALVINSTON/CUMULATIVE PRECIP.

#05

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| REMOVAL DATE | EXPOSURE DATE | CHLORIDE MG/L | KJELDAHL AS N MG/L | MAGNESIUM MG/L | POTASSIUM MG/L | SODIUM MG/L | AMMONIUM AS N MG/L | PHOSPHOR MG/L |
|-----------------|------------------|------------------|--------------------------|-------------------|-------------------|----------------|--------------------------|------------------|
| JAN 29,85 | JAN 2,85 | 0.38 | 0.28 | 0.065 | 0.055 | 0.140 | 0.165 | 0.016 |
| MAR 5,85 | JAN 29,85 | 0.28 | 0.32 | ***** | ***** | 0.140 | 0.230 | 0.006 |
| MAR 26,85 | MAR 5,85 | 0.20 | 0.50 | 0.065 | <T 0.015 | 0.095 | 0.320 | 0.017 |
| APR 23,85 | MAR 26,85 | 0.20 | 0.49 | 0.075 | 0.055 | 0.110 | 0.400 | <T 0.006 |
| MAY 21,85 | APR 23,85 | 0.31 | 1.20 | 0.190 | 0.155 | 0.100 | 0.950 | 0.024 |
| JUN 18,85 | MAY 21,85 | 0.09 | 0.58 | 0.065 | 0.045 | 0.055 | 0.520 | <T 0.002 |
| JUL 18,85 | JUN 18,85 | 0.16 | 0.45 | 0.105 | 0.100 | 0.035 | 0.535 | <T 0.003 |
| AUG 14,85 | JUL 18,85 | 0.10 | 0.45 | 0.075 | <T 0.020 | 0.030 | 0.385 | <T 0.005 |
| SEP 10,85 | AUG 14,85 | 0.11 | 0.33 | 0.045 | 0.025 | 0.035 | 0.240 | <T 0.005 |
| OCT 8,85 | SEP 10,85 | 0.32 | 0.60 | 0.175 | 0.115 | 0.115 | 0.565 | 0.008 |
| NOV 5,85 | OCT 8,85 | 0.15 | 0.19 | 0.080 | B 0.285 | 0.030 | LG 0.095 | 0.006 |
| DEC 3,85 | NOV 5,85 | 0.10 | 0.29 | 0.045 | <T 0.010 | 0.030 | 0.175 | <T 0.005 |
| DEC 31,85 | DEC 3,85 | 0.40 | 0.39 | 0.055 | 0.025 | 0.120 | 0.315 | 0.007 |

| REMOVAL DATE | EXPOSURE DATE | MANGANESE MG/L | NICKEL MG/L | ZINC MG/L | IRON MG/L | LEAD MG/L | VANADIUM MG/L | ALUMINUM MG/L |
|-----------------|------------------|-------------------|----------------|--------------|--------------|--------------|------------------|------------------|
| JAN 29,85 | JAN 2,85 | 0.004 | 0.0005 | 0.011 | 0.116 | 0.009 | 0.0006 | 0.119 |
| MAR 5,85 | JAN 29,85 | 0.003 | 0.0002 | 0.008 | 0.060 | 0.008 | < 0.0004 | 0.045 |
| MAR 26,85 | MAR 5,85 | 0.004 | 0.0002 | 0.013 | 0.070 | 0.010 | 0.0006 | 0.065 |
| APR 23,85 | MAR 26,85 | 0.005 | 0.0005 | 0.007 | 0.068 | 0.004 | < 0.0004 | 0.072 |
| MAY 21,85 | APR 23,85 | UG 0.017 | 0.0008 | 0.014 | UG 0.300 | 0.011 | 0.0007 | UG 0.352 |
| JUN 18,85 | MAY 21,85 | 0.005 | < 0.0002 | 0.004 | 0.038 | 0.004 | < 0.0004 | 0.031 |
| JUL 18,85 | JUN 18,85 | 0.008 | 0.0008 | 0.014 | 0.084 | 0.008 | < 0.0004 | 0.104 |
| AUG 14,85 | JUL 18,85 | 0.003 | 0.0002 | 0.009 | 0.035 | 0.002 | < 0.0004 | 0.039 |
| SEP 10,85 | AUG 14,85 | 0.002 | 0.0009 | 0.005 | 0.024 | 0.005 | < 0.0004 | 0.024 |
| OCT 8,85 | SEP 10,85 | 0.006 | 0.0007 | 0.009 | 0.082 | 0.018 | < 0.0004 | 0.100 |
| NOV 5,85 | OCT 8,85 | 0.003 | 0.0004 | 0.001 | 0.017 | < 0.001 | < 0.0004 | 0.021 |
| DEC 3,85 | NOV 5,85 | 0.004 | 0.0003 | 0.007 | 0.085 | 0.003 | 0.0004 | 0.068 |
| DEC 31,85 | DEC 3,85 | 0.004 | 0.0015 | 0.011 | 0.078 | 0.006 | < 0.0004 | 0.068 |

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : ALVINSTON/CUMULATIVE PRECIP.

#05

PAGE : 3

| REMOVAL DATE | EXPOSURE DATE | COPPER MG/L | CADMIUM MG/L | FREE H+ MG/L |
|-----------------|------------------|----------------|-----------------|-----------------|
| JAN 29,85 | JAN 2,85 | 0.0014 | 0.00063 | 0.0288 |
| MAR 5,85 | JAN 29,85 | 0.0008 | 0.00040 | 0.0407 |
| MAR 26,85 | MAR 5,85 | 0.0028 | 0.00022 | 0.0661 |
| APR 23,85 | MAR 26,85 | 0.0011 | 0.00136 | 0.0316 |
| MAY 21,85 | APR 23,85 | 0.0019 | 0.00019 | 0.0851 |
| JUN 18,85 | MAY 21,85 | 0.0013 | 0.00010 | 0.0537 |
| JUL 18,85 | JUN 18,85 | 0.0023 | < 0.00002 | 0.0646 |
| AUG 14,85 | JUL 18,85 | 0.0007 | 0.00012 | 0.0589 |
| SEP 10,85 | AUG 14,85 | 0.0006 | 0.00005 | 0.0741 |
| OCT 8,85 | SEP 10,85 | 0.0022 | 0.00009 | 0.0794 |
| NOV 5,85 | OCT 8,85 | 0.0004 | 0.00003 | 0.0251 |
| DEC 3,85 | NOV 5,85 | 0.0008 | 0.00110 | 0.0251 |
| DEC 31,85 | DEC 3,85 | 0.0014 | 0.00020 | 0.0631 |

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : COLCHESTER/CUMULATIVE PRECIP.

#01

PAGE : 1

| REMOVAL DATE | EXPOSURE DATE | SAMPLING START HR. | END HR. | SAMPLE TYPE 01-RAIN 02-SNOW 03-COMP/04-OTHER | GAUGE DEPTH(MM) | GAUGE TYPE 02,03-APIOS 09-AES | SAMPLE NUMBER | PROJECT CODE 02-APIOS 03-SPECIAL | SUBPROJECT CODE 01-MOE 03-AES | SAMPLER EFFICI- ENCY (%) | COMMENTS FIELD OFFICE |
|-----------------|------------------|--------------------------|------------|--|--------------------|--|------------------|---|--|-----------------------------------|--------------------------|
| JAN 29,85 | JAN 1,85 | 930 | 805 | 2 | 31.0 | 2 | 19755 | 2 | 1 | 66 | |
| FEB 26,85 | JAN 29,85 | 815 | 800 | 3 | 103.0 | 2 | 19795 | 2 | 1 | 54 | |
| MAR 26,85 | FEB 26,85 | 813 | 800 | 3 | 74.0 | 2 | 19813 | 2 | 1 | 74 | |
| APR 23,85 | MAR 26,85 | 811 | 735 | 3 | 109.0 | 2 | 19831 | 2 | 1 | 94 | H |
| MAY 21,85 | APR 23,85 | 735 | 730 | 1 | 34.0 | 3 | 19844 | 2 | 1 | 76 | CD |
| JUN 18,85 | MAY 21,85 | 730 | 1500 | 1 | 69.0 | 3 | 19879 | 2 | 1 | 80 | CQ |
| JUL 16,85 | JUN 18,85 | 1500 | 830 | 1 | 60.0 | 3 | 19901 | 2 | 1 | 95 | A |
| AUG 13,85 | JUL 16,85 | 800 | 800 | 4 | 230.3 | 3 | 19925 | 2 | 1 | 8 | AC N |
| SEP 10,85 | AUG 13,85 | 815 | 810 | 1 | 116.0 | 3 | 19947 | 2 | 1 | 92 | AC |
| OCT 8,85 | SEP 10,85 | 820 | 800 | 1 | 16.0 | 3 | 19969 | 2 | 1 | U 87 | ACIM |
| NOV 5,85 | OCT 8,85 | 820 | 1320 | 1 | 114.0 | 3 | 19979 | 2 | 1 | 84 | AC |
| DEC 3,85 | NOV 5,85 | 1330 | 810 | 3 | 106.0 | 3 | 74013 | 2 | 1 | U 67 | CGQ |
| DEC 31,85 | DEC 3,85 | 815 | 800 | 2 | 37.0 | 3 | 74049 | 2 | 1 | 67 | |

| REMOVAL DATE | EXPOSURE DATE | VOLUME ML | CONDUCT. UMHO/CM | PH LAB | TOTAL H+ GRAM MG/L | SULPHATE MG/L | NITRATE AS N MG/L | CALCIUM MG/L |
|-----------------|------------------|--------------|---------------------|-----------|--------------------------|------------------|-------------------------|-----------------|
| JAN 29,85 | JAN 1,85 | 670.0 | 21.1 | 4.55 | 0.0535 | 1.55 | 0.48 | 0.41 |
| FEB 26,85 | JAN 29,85 | 1837.0 | 37.0 | 4.22 | 0.0893 | 2.60 | 0.59 | ***** |
| MAR 26,85 | FEB 26,85 | 1799.0 | 41.4 | 4.14 | 0.1030 | 3.75 | 0.68 | 0.30 |
| APR 23,85 | MAR 26,85 | 3343.0 | 17.9 | 4.71 | 0.0429 | 2.55 | 0.30 | 0.62 |
| MAY 21,85 | APR 23,85 | 849.0 | 50.1 | 4.10 | 0.1060 | 6.65 | 0.97 | 0.99 |
| JUN 18,85 | MAY 21,85 | 1795.0 | 38.6 | 4.18 | 0.0955 | 4.80 | 0.53 | 0.37 |
| JUL 16,85 | JUN 18,85 | 1855.0 | 45.3 | 4.14 | 0.1080 | 4.85 | 0.60 | 0.39 |
| AUG 13,85 | JUL 16,85 | 641.0 | 37.8 | D 4.45 | 0.0703 | 6.20 | 0.74 | 0.62 |
| SEP 10,85 | AUG 13,85 | 3502.0 | 44.6 | 4.08 | 0.1170 | 4.90 | 0.53 | 0.26 |
| OCT 8,85 | SEP 10,85 | 457.0 | 35.6 | 4.29 | 0.0802 | 5.35 | 0.69 | 0.93 |
| NOV 5,85 | OCT 8,85 | 3128.0 | D 37.4 | 4.12 | 0.1010 | D 4.00 | 0.48 | 0.24 |
| DEC 3,85 | NOV 5,85 | 2318.0 | 18.2 | 4.58 | 0.0536 | 2.05 | LO 0.17 | 0.19 |
| DEC 31,85 | DEC 3,85 | 815.0 | 32.7 | 4.31 | 0.0881 | 2.20 | 0.74 | 0.28 |

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : COLCHESTER/CUMULATIVE PRECIP.

#01

PAGE : 2

| REMOVAL DATE | EXPOSURE DATE | CHLORIDE MG/L | KJELDAHL AS N MG/L | MAGNESIM MG/L | POTASSIM MG/L | SODIUM MG/L | AMMONIUM AS N MG/L | PHOSPHOR MG/L |
|-----------------|------------------|------------------|--------------------------|------------------|------------------|----------------|--------------------------|------------------|
| JAN 29,85 | JAN 1,85 | 0.59 | ***** | 0.120 | 0.030 | 0.230 | 0.125 | ***** |
| FEB 26,85 | JAN 29,85 | 0.47 | 0.25 | ***** | ***** | ***** | 0.180 | 0.006 |
| MAR 26,85 | FEB 26,85 | 0.22 | 0.54 | 0.075 | <M 0.005 | 0.095 | 0.425 | 0.006 |
| APR 23,85 | MAR 26,85 | 0.17 | 0.45 | 0.085 | 0.040 | 0.105 | 0.385 | <T 0.005 |
| MAY 21,85 | APR 23,85 | 0.12 | 1.21 | 0.230 | 0.075 | 0.080 | 1.050 | 0.022 |
| JUN 18,85 | MAY 21,85 | 0.17 | 0.64 | 0.085 | 0.050 | 0.035 | 0.530 | 0.007 |
| JUL 16,85 | JUN 18,85 | 0.28 | 0.76 | 0.095 | 0.110 | 0.050 | 0.650 | D 0.043 |
| AUG 13,85 | JUL 16,85 | 0.23 | 1.82 | 0.135 | 0.195 | D 0.095 | 1.480 | B 0.142 |
| SEP 10,85 | AUG 13,85 | 0.22 | 0.51 | 0.045 | 0.035 | 0.060 | 0.420 | 0.010 |
| OCT 8,85 | SEP 10,85 | 0.31 | 0.71 | 0.280 | 0.160 | 0.135 | 0.585 | D 0.032 |
| NOV 5,85 | OCT 8,85 | 0.25 | 0.38 | 0.030 | 0.030 | 0.045 | 0.370 | <T 0.003 |
| DEC 3,85 | NOV 5,85 | D 0.28 | 1.30 | 0.040 | D 0.090 | D 0.125 | 0.165 | <T 0.003 |
| DEC 31,85 | DEC 3,85 | 0.36 | 0.34 | 0.075 | 0.045 | 0.135 | 0.240 | <T 0.004 |

| REMOVAL DATE | EXPOSURE DATE | MANGANESE MG/L | NICKEL MG/L | ZINC MG/L | IRON MG/L | LEAD MG/L | VANADIUM MG/L | ALUMINUM MG/L |
|-----------------|------------------|-------------------|----------------|--------------|--------------|--------------|------------------|------------------|
| JAN 29,85 | JAN 1,85 | 0.004 | 0.0013 | 0.024 | 0.180 | 0.010 | 0.0004 | 0.181 |
| FEB 26,85 | JAN 29,85 | D 0.002 | 0.0003 | 0.011 | 0.025 | 0.007 | < 0.0004 | 0.031 |
| MAR 26,85 | FEB 26,85 | 0.003 | 0.0002 | 0.010 | 0.051 | 0.010 | 0.0004 | 0.046 |
| APR 23,85 | MAR 26,85 | 0.004 | 0.0004 | 0.007 | 0.065 | 0.002 | < 0.0004 | 0.076 |
| MAY 21,85 | APR 23,85 | UG 0.012 | 0.0005 | 0.016 | UG 0.266 | 0.010 | 0.0006 | UG 0.308 |
| JUN 18,85 | MAY 21,85 | 0.005 | 0.0002 | 0.008 | 0.044 | 0.003 | < 0.0004 | 0.047 |
| JUL 16,85 | JUN 18,85 | 0.006 | 0.0011 | 0.014 | 0.082 | 0.006 | 0.0005 | 0.157 |
| AUG 13,85 | JUL 16,85 | 0.004 | D 0.0026 | 0.015 | 0.061 | 0.005 | < 0.0004 | 0.078 |
| SEP 10,85 | AUG 13,85 | 0.002 | 0.0003 | 0.006 | 0.032 | 0.002 | < 0.0004 | 0.046 |
| OCT 8,85 | SEP 10,85 | 0.005 | 0.0005 | 0.010 | 0.104 | 0.006 | < 0.0004 | 0.087 |
| NOV 5,85 | OCT 8,85 | 0.001 | 0.0004 | 0.004 | 0.016 | 0.007 | < 0.0004 | 0.021 |
| DEC 3,85 | NOV 5,85 | 0.001 | 0.0017 | 0.010 | 0.015 | < 0.001 | 0.0004 | 0.024 |
| DEC 31,85 | DEC 3,85 | 0.004 | 0.0016 | 0.013 | 0.054 | 0.004 | < 0.0004 | 0.041 |

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5
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ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

| STATION NAME : COLCHESTER/CUMULATIVE PRECIP. | | #01 | | PAGE : 3 |
|--|------------------|----------------|-----------------|-----------------|
| REMOVAL DATE | EXPOSURE DATE | COPPER MG/L | CADMIUM MG/L | FREE H+ MG/L |
| JAN 29,85 | JAN 1,85 | 0.0010 | 0.00011 | 0.0282 |
| FEB 26,85 | JAN 29,85 | 0.0006 | 0.00007 | 0.0603 |
| MAR 26,85 | FEB 26,85 | 0.0010 | 0.00011 | 0.0724 |
| APR 23,85 | MAR 26,85 | 0.0004 | 0.00007 | 0.0195 |
| MAY 21,85 | APR 23,85 | < 0.0004 | 0.00014 | 0.0794 |
| JUN 18,85 | MAY 21,85 | 0.0010 | 0.00008 | 0.0661 |
| JUL 16,85 | JUN 18,85 | 0.0010 | 0.00007 | 0.0724 |
| AUG 13,85 | JUL 16,85 | 0.0037 | 0.00011 | D 0.0355 |
| SEP 10,85 | AUG 13,85 | 0.0019 | 0.00001 | 0.0832 |
| OCT 8,85 | SEP 10,85 | U 0.0047 | 0.00029 | 0.0513 |
| NOV 5,85 | OCT 8,85 | 0.0005 | 0.00008 | 0.0759 |
| DEC 3,85 | NOV 5,85 | D 0.0056 | 0.00046 | 0.0263 |
| DEC 31,85 | DEC 3,85 | 0.0024 | 0.00027 | 0.0490 |

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ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : HURON PARK/CUMULATIVE PRECIP.

#06

PAGE : 1

| REMOVAL DATE | EXPOSURE DATE | SAMPLING START HR. | SAMPLING END HR. | SAMPLE TYPE 01-RAIN 02-SNOW 03-COMP/04-OTHER | GAUGE DEPTH(MM) | GAUGE TYPE 02,03-APIOS 09-AES | SAMPLE NUMBER | PROJECT CODE 02-APIOS 03-SPECIAL | SUBPROJECT CODE 01-MOE 03-AES | SAMPLER EFFICI- ENCY (%) | COMMENTS FIELD OFFICE |
|-----------------|------------------|--------------------------|------------------------|--|--------------------|--|------------------|---|--|-----------------------------------|--------------------------|
| JAN 30,85 | JAN 2,85 | 1100 | 1100 | 2 | 25.0 | 2 | 19765 | 2 | 1 | 64 | |
| MAR 5,85 | JAN 30,85 | 1100 | 1000 | 3 | 156.0 | 2 | 19785 | 2 | 1 | 55 | |
| MAR 26,85 | MAR 5,85 | 1000 | 1015 | 3 | 13.0 | 2 | 19809 | 2 | 1 | 96 | Q |
| APR 23,85 | MAR 26,85 | 1015 | 1100 | * | ***** | * | 19840 | 2 | 1 | *** | GE |
| MAY 21,85 | APR 23,85 | 1100 | 930 | 1 | 32.0 | 3 | 19852 | 2 | 1 | 66 | CD N |
| JUN 18,85 | MAY 21,85 | 1000 | 1300 | 1 | 21.0 | 3 | 19888 | 2 | 1 | 284 | ACQ |
| JUL 16,85 | JUN 18,85 | 1300 | 1200 | 1 | 41.0 | 1 | 19912 | 2 | 1 | 104 | |
| AUG 13,85 | JUL 16,85 | 1200 | 1300 | 1 | 20.4 | 1 | 19933 | 2 | 1 | 61 | A |
| SEP 10,85 | AUG 13,85 | 1300 | 900 | 1 | 135.0 | 3 | 19955 | 2 | 1 | 97 | |
| OCT 8,85 | SEP 10,85 | 1000 | 1200 | 1 | 22.0 | 3 | 19977 | 2 | 1 | 111 | |
| NOV 5,85 | OCT 8,85 | 1200 | 1200 | 1 | 103.0 | 3 | 19987 | 2 | 1 | 101 | |
| DEC 3,85 | NOV 5,85 | 1200 | 1000 | 3 | 83.0 | 3 | 74021 | 2 | 1 | 98 | C |
| DEC 31,85 | DEC 3,85 | 1030 | 1030 | 2 | 52.0 | 3 | 74057 | 2 | 1 | 37 | N |

| REMOVAL DATE | EXPOSURE DATE | VOLUME ML | CONDUCT. UMHO/CM | PH LAB | TOTAL H+ GRAM MG/L | SULPHATE MG/L | NITRATE AS N MG/L | CALCIUM MG/L |
|-----------------|------------------|--------------|---------------------|-----------|--------------------------|------------------|-------------------------|-----------------|
| JAN 30,85 | JAN 2,85 | 522.0 | 20.1 | 4.45 | 0.0611 | 1.70 | 0.57 | 0.29 |
| MAR 5,85 | JAN 30,85 | 2829.0 | 32.8 | 4.25 | 0.0837 | 2.55 | 0.55 | ***** |
| MAR 26,85 | MAR 5,85 | 406.0 | 44.0 | 4.22 | 0.0913 | 4.40 | 1.12 | 0.79 |
| APR 23,85 | MAR 26,85 | ***** | ***** | ***** | ***** | ***** | ***** | ***** |
| MAY 21,85 | APR 23,85 | 690.0 | 43.4 | UG 4.81 | LG 0.0425 | 8.25 | UG 1.33 | 2.08 |
| JUN 18,85 | MAY 21,85 | 1941.0 | 28.4 | UG 4.90 | LG 0.0368 | 4.85 | D 0.83 | D 1.09 |
| JUL 16,85 | JUN 18,85 | 1395.0 | 49.7 | 4.15 | 0.1030 | 6.10 | 0.87 | 0.94 |
| AUG 13,85 | JUL 16,85 | 405.0 | 51.0 | 4.22 | 0.1020 | 7.40 | 1.00 | 1.17 |
| SEP 10,85 | AUG 13,85 | 4290.0 | 45.1 | 4.08 | 0.1110 | 4.25 | 0.70 | 0.26 |
| OCT 8,85 | SEP 10,85 | 793.0 | 39.9 | 4.23 | 0.0888 | 4.80 | 0.70 | 0.68 |
| NOV 5,85 | OCT 8,85 | 3400.0 | 27.1 | 4.35 | 0.0663 | 2.70 | 0.41 | 0.20 |
| DEC 3,85 | NOV 5,85 | 2643.0 | 23.5 | 4.48 | 0.0670 | 2.50 | 0.44 | D 0.52 |
| DEC 31,85 | DEC 3,85 | 640.0 | 42.9 | 4.19 | 0.1080 | 3.15 | 1.18 | 0.43 |

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : HURON PARK/CUMULATIVE PRECIP.

#06

PAGE 1 2

| REMOVAL DATE | EXPOSURE DATE | CHLORIDE MG/L | KJELDAHL AS N MG/L | MAGNESIM MG/L | POTASSIM MG/L | SODIUM MG/L | AMMONIUM AS N MG/L | PHOSPHOR MG/L |
|-----------------|------------------|------------------|--------------------------|------------------|------------------|----------------|--------------------------|------------------|
| JAN 30,85 | JAN 2,85 | 0.32 | 0.40 | 0.040 | 0.025 | 0.120 | 0.310 | 0.020 |
| MAR 5,85 | JAN 30,85 | 0.31 | 0.40 | ***** | ***** | ***** | 0.345 | 0.006 |
| MAR 26,85 | MAR 5,85 | 0.34 | 1.15 | 0.115 | <T 0.100 | 0.120 | 0.900 | 0.017 |
| APR 23,85 | MAR 26,85 | ***** | ***** | ***** | ***** | ***** | ***** | ***** |
| MAY 21,85 | APR 23,85 | 0.33 | UG 1.96 | 0.315 | 0.080 | 0.080 | UG 1.950 | 0.022 |
| JUN 18,85 | MAY 21,85 | 0.18 | 1.35 | D 0.190 | 0.060 | 0.060 | 1.150 | 0.016 |
| JUL 16,85 | JUN 18,85 | 0.23 | 0.80 | 0.160 | 0.080 | 0.055 | 0.830 | <T 0.003 |
| AUG 13,85 | JUL 16,85 | 0.25 | 1.26 | 0.185 | <T 0.020 | 0.050 | 1.200 | 0.007 |
| SEP 10,85 | AUG 13,85 | 0.21 | 0.54 | 0.040 | 0.020 | 0.035 | 0.480 | 0.008 |
| OCT 8,85 | SEP 10,85 | 0.20 | 0.65 | 0.115 | 0.065 | 0.060 | 0.615 | 0.012 |
| NOV 5,85 | OCT 8,85 | 0.08 | 0.38 | 0.035 | <T 0.015 | 0.030 | 0.320 | 0.012 |
| DEC 3,85 | NOV 5,85 | 0.12 | 0.68 | 0.080 | 0.035 | 0.060 | 0.250 | D 0.051 |
| DEC 31,85 | DEC 3,85 | 0.45 | 0.77 | 0.085 | 0.030 | 0.130 | 0.665 | <T 0.003 |

| REMOVAL DATE | EXPOSURE DATE | MANGANESE MG/L | NICKEL MG/L | ZINC MG/L | IRON MG/L | LEAD MG/L | VANADIUM MG/L | ALUMINUM MG/L |
|-----------------|------------------|-------------------|----------------|--------------|--------------|--------------|------------------|------------------|
| JAN 30,85 | JAN 2,85 | 0.002 | 0.0003 | 0.011 | 0.066 | 0.017 | 0.0005 | 0.062 |
| MAR 5,85 | JAN 30,85 | 0.001 | < 0.0002 | 0.004 | 0.015 | 0.007 | < 0.0004 | 0.020 |
| MAR 26,85 | MAR 5,85 | 0.006 | 0.0005 | 0.017 | 0.097 | 0.017 | 0.0005 | 0.112 |
| APR 23,85 | MAR 26,85 | ***** | ***** | ***** | ***** | ***** | ***** | ***** |
| MAY 21,85 | APR 23,85 | 0.007 | 0.0017 | 0.008 | 0.103 | 0.005 | < 0.0004 | 0.092 |
| JUN 18,85 | MAY 21,85 | B 0.015 | D 0.0004 | 0.009 | B 0.303 | D 0.012 | D 0.0008 | U 0.258 |
| JUL 16,85 | JUN 18,85 | UG 0.010 | 0.0008 | 0.009 | 0.131 | D 0.014 | < 0.0004 | 0.122 |
| AUG 13,85 | JUL 16,85 | 0.006 | 0.0004 | 0.008 | 0.063 | 0.007 | D 0.0006 | 0.100 |
| SEP 10,85 | AUG 13,85 | D 0.008 | D 0.0026 | D 0.020 | U 0.353 | 0.010 | 0.0014 | U 0.292 |
| OCT 8,85 | SEP 10,85 | 0.005 | 0.0005 | 0.021 | 0.063 | 0.008 | < 0.0004 | 0.061 |
| NOV 5,85 | OCT 8,85 | 0.001 | 0.0002 | 0.004 | 0.024 | 0.007 | < 0.0004 | 0.023 |
| DEC 3,85 | NOV 5,85 | D 0.012 | 0.0013 | 0.015 | U 0.539 | 0.005 | D 0.0015 | U 0.655 |
| DEC 31,85 | DEC 3,85 | 0.005 | 0.0004 | 0.036 | 0.050 | 0.008 | 0.0009 | 0.082 |

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : HURON PARK/CUMULATIVE PRECIP.

#06

PAGE 1 3

| REMOVAL DATE | EXPOSURE DATE | COPPER MG/L | CADMIUM MG/L | FREE H+ MG/L |
|-----------------|------------------|----------------|-----------------|-----------------|
| JAN 30,85 | JAN 2,85 | 0.0017 | 0.00008 | 0.0355 |
| MAR 5,85 | JAN 30,85 | 0.0002 | 0.00005 | 0.0562 |
| MAR 26,85 | MAR 5,85 | 0.0040 | 0.00019 | 0.0603 |
| APR 23,85 | MAR 26,85 | ***** | ***** | ***** |
| MAY 21,85 | APR 23,85 | 0.0007 | 0.00030 | LG 0.0155 |
| JUN 18,85 | MAY 21,85 | 0.0021 | 0.00012 | LG 0.0126 |
| JUL 16,85 | JUN 18,85 | 0.0029 | 0.00004 | 0.0708 |
| AUG 13,85 | JUL 16,85 | 0.0027 | 0.00006 | 0.0603 |
| SEP 10,85 | AUG 13,85 | 0.0022 | 0.00014 | 0.0832 |
| OCT 8,85 | SEP 10,85 | 0.0013 | 0.00006 | 0.0589 |
| NOV 5,85 | OCT 8,85 | < 0.0003 | 0.00004 | 0.0447 |
| DEC 3,85 | NOV 5,85 | 0.0016 | 0.00017 | 0.0331 |
| DEC 31,85 | DEC 3,85 | 0.0016 | 0.00018 | 0.0646 |

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : MERLIN/CUMULATIVE PRECIP.

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PAGE : 1

| REMOVAL DATE | EXPOSURE DATE | SAMPLING START HR. | SAMPLING END HR. | SAMPLE TYPE 01-RAIN 02-SNOW 03-COMP/04-OTHER | GAUGE DEPTH(MM) | GAUGE TYPE 02,03-APIOS 09-AES | SAMPLE NUMBER | PROJECT CODE 02-APIOS 03-SPECIAL | SUBPROJECT CODE 01-MOE 03-AES | SAMPLER EFFICI- ENCY (%) | COMMENTS FIELD OFFICE |
|-----------------|------------------|--------------------------|------------------------|--|--------------------|--|------------------|---|--|-----------------------------------|--------------------------|
| JAN 29,85 | JAN 2,85 | 900 | 700 | 2 | ***** | # | 19756 | 2 | 1 | *** | CQ HM |
| FEB 26,85 | JAN 29,85 | 700 | 900 | 3 | 104.0 | 2 | 19794 | 2 | 1 | 76 | |
| MAR 26,85 | FEB 26,85 | 900 | 700 | 3 | 68.0 | 2 | 19810 | 2 | 1 | 71 | |
| APR 23,85 | MAR 26,85 | 700 | 700 | 1 | 88.0 | 2 | 19832 | 2 | 1 | 79 | |
| MAY 21,85 | APR 23,85 | 700 | 700 | 1 | 36.0 | 3 | 19845 | 2 | 1 | 88 | AC |
| JUN 18,85 | MAY 21,85 | 700 | 700 | 1 | 75.0 | 3 | 19880 | 2 | 1 | 87 | A |
| JUL 17,85 | JUN 18,85 | 700 | 1500 | 1 | 105.0 | 3 | 19902 | 2 | 1 | 88 | |
| AUG 13,85 | JUL 17,85 | 1500 | 700 | 1 | 40.0 | 3 | 19926 | 2 | 1 | 84 | AC |
| SEP 10,85 | AUG 13,85 | 700 | 800 | 1 | 148.0 | 3 | 19948 | 2 | 1 | 84 | A |
| OCT 8,85 | SEP 10,85 | 800 | 700 | 1 | 16.0 | 3 | 19970 | 2 | 1 | 65 | A |
| NOV 5,85 | OCT 8,85 | 700 | 700 | 1 | 153.0 | 3 | 19980 | 2 | 1 | 88 | A |
| DEC 3,85 | NOV 5,85 | 700 | 700 | 3 | 149.0 | 3 | 74014 | 2 | 1 | 54 | CD |
| DEC 31,85 | DEC 3,85 | 700 | 700 | 2 | 25.0 | 3 | 74050 | 2 | 1 | 89 | |

| REMOVAL DATE | EXPOSURE DATE | VOLUME ML | CONDUCT. UMHO/CM | PH LAB | TOTAL H+ GRAN MG/L | SULPHATE MG/L | NITRATE AS N MG/L | CALCIUM MG/L |
|-----------------|------------------|--------------|---------------------|-----------|--------------------------|------------------|-------------------------|-----------------|
| JAN 29,85 | JAN 2,85 | 355.0 | U 60.2 | U 7.34 | U 0.0199 | 5.65 | 1.19 | U 6.80 |
| FEB 26,85 | JAN 29,85 | 2569.0 | 38.8 | 4.15 | 0.1000 | 2.60 | 0.62 | ***** |
| MAR 26,85 | FEB 26,85 | 1568.0 | 41.8 | 4.20 | 0.0916 | 4.55 | 0.75 | 0.82 |
| APR 23,85 | MAR 26,85 | 2272.0 | 23.9 | 4.55 | 0.0561 | 3.15 | 0.47 | 0.67 |
| MAY 21,85 | APR 23,85 | 1029.0 | 41.0 | 4.20 | 0.0890 | 5.25 | 0.74 | 0.78 |
| JUN 18,85 | MAY 21,85 | 2138.0 | 37.0 | 4.22 | 0.0868 | 4.35 | 0.67 | 0.42 |
| JUL 17,85 | JUN 18,85 | 3006.0 | 26.8 | 4.38 | 0.0663 | 2.80 | 0.46 | 0.42 |
| AUG 13,85 | JUL 17,85 | 1102.0 | 37.3 | 4.25 | 0.0892 | 4.75 | 0.42 | 0.52 |
| SEP 10,85 | AUG 13,85 | 4070.0 | 46.8 | 4.05 | 0.1240 | 4.90 | 0.61 | 0.24 |
| OCT 8,85 | SEP 10,85 | 340.0 | 40.6 | 4.23 | 0.0922 | 5.95 | 0.77 | 1.06 |
| NOV 5,85 | OCT 8,85 | 4404.0 | 28.5 | 4.21 | 0.0798 | 2.65 | 0.34 | 0.10 |
| DEC 3,85 | NOV 5,85 | 2629.0 | 30.9 | 4.24 | 0.0894 | 2.75 | 0.37 | 0.15 |
| DEC 31,85 | DEC 3,85 | 726.0 | 43.2 | B 4.91 | 0.0423 | 3.75 | 1.07 | D 1.84 |

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : MERLIN/CUMULATIVE PRECIP.

#02

PAGE : 2

| REMOVAL DATE | EXPOSURE DATE | CHLORIDE MG/L | KJELDAHL AS N MG/L | MAGNESIM MG/L | POTASSIM MG/L | SODIUM MG/L | AMMONIUM AS N MG/L | PHOSPHOR MG/L |
|-----------------|------------------|------------------|--------------------------|------------------|------------------|----------------|--------------------------|------------------|
| JAN 29,85 | JAN 2,85 | U 3.30 | ***** | U 1.100 | U 0.315 | U 1.700 | 0.275 | ***** |
| FEB 26,85 | JAN 29,85 | 0.46 | 0.26 | ***** | ***** | ***** | 0.170 | 0.012 |
| MAR 26,85 | FEB 26,85 | 0.29 | 0.69 | 0.125 | <T 0.015 | 0.115 | 0.470 | 0.013 |
| APR 23,85 | MAR 26,85 | 0.19 | 0.56 | 0.080 | 0.060 | 0.115 | 0.485 | <T 0.006 |
| MAY 21,85 | APR 23,85 | 0.15 | 0.92 | 0.165 | 0.060 | 0.040 | 0.745 | 0.019 |
| JUN 18,85 | MAY 21,85 | 0.14 | 0.72 | 0.065 | 0.050 | 0.040 | 0.625 | <T 0.005 |
| JUL 17,85 | JUN 18,85 | 0.11 | 0.38 | 0.085 | 0.065 | 0.020 | 0.330 | 0.007 |
| AUG 13,85 | JUL 17,85 | 0.16 | 0.61 | 0.085 | 0.225 | 0.025 | 0.475 | 0.017 |
| SEP 10,85 | AUG 13,85 | 0.18 | 0.50 | 0.040 | 0.025 | 0.060 | 0.470 | 0.008 |
| OCT 8,85 | SEP 10,85 | 0.29 | 0.72 | 0.240 | 0.145 | 0.100 | 0.635 | 0.014 |
| NOV 5,85 | OCT 8,85 | 0.08 | 0.20 | 0.020 | <T 0.015 | 0.035 | 0.185 | <T 0.001 |
| DEC 3,85 | NOV 5,85 | 0.15 | 0.28 | 0.030 | <T 0.015 | 0.060 | 0.170 | 0.010 |
| DEC 31,85 | DEC 3,85 | B 5.05 | 0.48 | D 0.350 | D 0.075 | B 3.350 | 0.270 | 0.024 |

| REMOVAL DATE | EXPOSURE DATE | MANGANSE MG/L | NICKEL MG/L | ZINC MG/L | IRON MG/L | LEAD MG/L | VANADIUM MG/L | ALUMINUM MG/L |
|-----------------|------------------|------------------|----------------|--------------|--------------|--------------|------------------|------------------|
| JAN 29,85 | JAN 2,85 | U 0.040 | U 0.0040 | 0.035 | U 2.852 | 0.021 | 0.0004 | U 2.456 |
| FEB 26,85 | JAN 29,85 | 0.001 | 0.0003 | 0.005 | 0.016 | 0.006 | < 0.0004 | 0.025 |
| MAR 26,85 | FEB 26,85 | 0.005 | 0.0002 | 0.011 | 0.096 | 0.009 | 0.0004 | 0.076 |
| APR 23,85 | MAR 26,85 | 0.006 | 0.0004 | 0.006 | U 0.813 | 0.003 | 0.0004 | U 0.953 |
| MAY 21,85 | APR 23,85 | UG 0.009 | 0.0008 | 0.009 | UG 0.225 | 0.009 | 0.0004 | 0.228 |
| JUN 18,85 | MAY 21,85 | 0.006 | < 0.0002 | 0.004 | 0.052 | 0.002 | < 0.0004 | 0.058 |
| JUL 17,85 | JUN 18,85 | 0.003 | D 0.0024 | 0.008 | 0.047 | 0.009 | < 0.0004 | 0.035 |
| AUG 13,85 | JUL 17,85 | 0.002 | < 0.0002 | 0.007 | 0.027 | 0.003 | < 0.0004 | 0.030 |
| SEP 10,85 | AUG 13,85 | 0.002 | 0.0011 | 0.005 | 0.029 | 0.007 | < 0.0004 | 0.039 |
| OCT 8,85 | SEP 10,85 | 0.006 | 0.0004 | 0.018 | 0.160 | 0.005 | < 0.0004 | 0.128 |
| NOV 5,85 | OCT 8,85 | < 0.001 | 0.0003 | 0.001 | 0.010 | 0.004 | < 0.0004 | 0.009 |
| DEC 3,85 | NOV 5,85 | 0.001 | 0.0002 | 0.003 | 0.025 | 0.001 | < 0.0004 | 0.030 |
| DEC 31,85 | DEC 3,85 | 0.011 | 0.0012 | 0.021 | D 0.356 | 0.007 | < 0.0004 | B 0.342 |

ONTARIO MINISTRY OF THE ENVIRONMENT
 CUMULATIVE SAMPLING ANALYSIS RESULTS
 APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : MERLIN/CUMULATIVE PRECIP.

#02

PAGE : 3

| REMOVAL DATE | EXPOSURE DATE | COPPER MG/L | CADMIUM MG/L | FREE H+ MG/L |
|-----------------|------------------|----------------|-----------------|-----------------|
| JAN 29,85 | JAN 2,85 | D 0.0096 | 0.00043 | U 0.0000 |
| FEB 26,85 | JAN 29,85 | < 0.0003 | 0.00005 | 0.0708 |
| MAR 26,85 | FEB 26,85 | 0.0011 | 0.00014 | 0.0631 |
| APR 23,85 | MAR 26,85 | 0.0010 | 0.00012 | 0.0282 |
| MAY 21,85 | APR 23,85 | 0.0021 | 0.00006 | 0.0631 |
| JUN 18,85 | MAY 21,85 | 0.0003 | 0.00006 | 0.0603 |
| JUL 17,85 | JUN 18,85 | 0.0012 | 0.00008 | 0.0417 |
| AUG 13,85 | JUL 17,85 | 0.0005 | < 0.00002 | 0.0562 |
| SEP 10,85 | AUG 13,85 | 0.0006 | 0.00009 | 0.0891 |
| OCT 8,85 | SEP 10,85 | 0.0021 | 0.00006 | 0.0589 |
| NOV 5,85 | OCT 8,85 | 0.0003 | 0.00004 | 0.0617 |
| DEC 3,85 | NOV 5,85 | 0.0006 | 0.00006 | 0.0575 |
| DEC 31,85 | DEC 3,85 | 0.0023 | 0.00022 | B 0.0123 |

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : PALMERSTON/CUMULATIVE PRECIP.

#08

PAGE : 1

| REMOVAL DATE | EXPOSURE DATE | SAMPLING START HR. | SAMPLING END HR. | SAMPLE TYPE 01-RAIN 02-SNOW 03-COMP/04-OTHER | GAUGE DEPTH(MM) | GAUGE TYPE 02,03-APIOS 09-AES | SAMPLE NUMBER | PROJECT CODE 02-APIOS 03-SPECIAL | SUBPROJECT CODE 01-MOE 03-AES | SAMPLER EFFICI- ENCY (%) | COMMENTS FIELD OFFICE |
|-----------------|------------------|--------------------------|------------------------|--|--------------------|--|------------------|---|--|-----------------------------------|--------------------------|
| JAN 29,85 | DEC 31,84 | 1300 | 1300 | 2 | 52.0 | 2 | 19763 | 2 | 1 | 76 | |
| FEB 26,85 | JAN 29,85 | 1300 | 1300 | 3 | 101.0 | 2 | 19796 | 2 | 1 | 58 | |
| MAR 26,85 | FEB 26,85 | 1300 | 1130 | 3 | 71.0 | 2 | 19818 | 2 | 1 | 34 | |
| APR 23,85 | MAR 26,85 | 1300 | 1300 | 3 | 90.0 | 2 | 19839 | 2 | 1 | 72 | N |
| MAY 22,85 | APR 23,85 | 1300 | 930 | 1 | 45.0 | 3 | 19851 | 2 | 1 | 97 | |
| JUN 18,85 | MAY 22,85 | 930 | 930 | 1 | 110.0 | 3 | 19886 | 2 | 1 | 83 | CD |
| JUL 16,85 | JUN 18,85 | 930 | 1300 | 1 | 85.0 | 3 | 19908 | 2 | 1 | 91 | AC |
| AUG 13,85 | JUL 16,85 | 1300 | 1300 | 1 | 15.0 | 3 | 19932 | 2 | 1 | 51 | |
| SEP 10,85 | AUG 13,85 | 1300 | 1100 | 1 | 225.0 | 3 | 19954 | 2 | 1 | 65 | |
| OCT 8,85 | SEP 10,85 | 1300 | 1300 | 1 | 55.0 | 3 | 19976 | 2 | 1 | 98 | |
| NOV 5,85 | OCT 8,85 | 1300 | 1300 | 1 | 95.0 | 3 | 19986 | 2 | 1 | 88 | U |
| DEC 4,85 | NOV 5,85 | 1300 | 1300 | 3 | 67.0 | 3 | 74020 | 2 | 1 | 17 | MF |
| DEC 31,85 | DEC 4,85 | 1300 | 1300 | 2 | 23.0 | 3 | 74056 | 2 | 1 | 62 | N |

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| REMOVAL DATE | EXPOSURE DATE | VOLUME ML | CONDUCT. UMHO/CM | PH LAB | TOTAL H+ GRAM MG/L | SULPHATE MG/L | NITRATE AS N MG/L | CALCIUM MG/L |
|-----------------|------------------|--------------|---------------------|-----------|--------------------------|------------------|-------------------------|-----------------|
| JAN 29,85 | DEC 31,84 | 1300.0 | LG 10.0 | 4.84 | 0.0377 | LG 1.10 | 0.28 | 0.18 |
| FEB 26,85 | JAN 29,85 | 1909.0 | 27.6 | 4.32 | 0.0707 | 2.00 | 0.50 | 0.08 |
| MAR 26,85 | FEB 26,85 | 794.0 | 23.9 | D 4.58 | 0.0551 | 2.90 | 0.60 | 0.68 |
| APR 23,85 | MAR 26,85 | 2112.0 | 21.3 | 4.63 | 0.0535 | 2.65 | 0.45 | 0.52 |
| MAY 22,85 | APR 23,85 | 1424.0 | 27.4 | UG 4.62 | LG 0.0473 | 4.60 | 0.63 | 0.69 |
| JUN 18,85 | MAY 22,85 | 2965.0 | 20.2 | B 5.77 | LG 0.0243 | 3.90 | 0.53 | 0.49 |
| JUL 16,85 | JUN 18,85 | 2530.0 | 21.1 | 4.54 | LG 0.0521 | 2.55 | 0.35 | 0.34 |
| AUG 13,85 | JUL 16,85 | 250.0 | 49.2 | 4.18 | 0.1100 | 6.40 | 0.81 | 0.91 |
| SEP 10,85 | AUG 13,85 | 4820.0 | 33.6 | 4.19 | 0.0876 | 3.20 | 0.45 | 0.14 |
| OCT 8,85 | SEP 10,85 | 1760.0 | 28.4 | 4.36 | 0.0693 | 3.30 | 0.47 | 0.41 |
| NOV 5,85 | OCT 8,85 | 2721.0 | 23.6 | 4.43 | 0.0614 | 2.35 | 0.34 | 0.12 |
| DEC 4,85 | NOV 5,85 | 370.0 | ***** | ***** | ***** | ***** | ***** | ***** |
| DEC 31,85 | DEC 4,85 | 465.0 | 54.6 | 4.09 | 0.1250 | 4.60 | UG 1.45 | 0.33 |

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : PALMERSTON/CUMULATIVE PRECIP.

#08

PAGE : 2

| REMOVAL DATE | EXPOSURE DATE | CHLORIDE MG/L | KJELDAHL AS N MG/L | MAGNESIM MG/L | POTASSIM MG/L | SODIUM MG/L | AMMONIUM AS N MG/L | PHOSPHOR MG/L |
|-----------------|------------------|------------------|--------------------------|------------------|------------------|----------------|--------------------------|------------------|
| JAN 29,85 | DEC 31,84 | 0.13 | 0.25 | 0.050 | 0.060 | 0.080 | 0.180 | 0.014 |
| FEB 26,85 | JAN 29,85 | 0.18 | 0.37 | 0.030 | 0.030 | 0.085 | 0.280 | 0.013 |
| MAR 26,85 | FEB 26,85 | 0.20 | 0.66 | 0.155 | <T 0.005 | 0.080 | 0.465 | 0.012 |
| APR 23,85 | MAR 26,85 | 0.13 | 0.58 | 0.075 | 0.020 | 0.065 | 0.500 | 0.006 |
| MAY 22,85 | APR 23,85 | 0.11 | 1.19 | 0.145 | 0.040 | 0.050 | 1.100 | 0.008 |
| JUN 18,85 | MAY 22,85 | 0.18 | 1.34 | 0.115 | U 0.385 | 0.065 | 1.150 | B 0.100 |
| JUL 16,85 | JUN 18,85 | 0.08 | 0.40 | 0.045 | 0.060 | 0.030 | 0.475 | <T 0.002 |
| AUG 13,85 | JUL 16,85 | 0.19 | 0.77 | 0.195 | 0.025 | 0.045 | 0.685 | <T 0.004 |
| SEP 10,85 | AUG 13,85 | 0.08 | 0.39 | 0.025 | 0.020 | <T 0.020 | 0.340 | 0.007 |
| OCT 8,85 | SEP 10,85 | 0.11 | 0.42 | 0.080 | 0.055 | 0.035 | 0.415 | 0.006 |
| NOV 5,85 | OCT 8,85 | 0.07 | 0.36 | 0.025 | 0.020 | 0.025 | 0.335 | 0.006 |
| DEC 4,85 | NOV 5,85 | ***** | ***** | ***** | ***** | ***** | ***** | ***** |
| DEC 31,85 | DEC 4,85 | 0.56 | D 1.34 | 0.095 | 0.045 | 0.245 | D 1.150 | 0.015 |

| REMOVAL DATE | EXPOSURE DATE | MANGANSE MG/L | NICKEL MG/L | ZINC MG/L | IRON MG/L | LEAD MG/L | VANADIUM MG/L | ALUMINUM MG/L |
|-----------------|------------------|------------------|----------------|--------------|--------------|--------------|------------------|------------------|
| JAN 29,85 | DEC 31,84 | 0.002 | 0.0003 | 0.007 | 0.037 | 0.003 | < 0.0004 | 0.038 |
| FEB 26,85 | JAN 29,85 | 0.001 | 0.0011 | 0.008 | 0.016 | 0.006 | < 0.0004 | 0.021 |
| MAR 26,85 | FEB 26,85 | 0.006 | D 0.0011 | 0.012 | 0.098 | 0.013 | < 0.0004 | 0.079 |
| APR 23,85 | MAR 26,85 | 0.004 | 0.0002 | 0.006 | 0.076 | 0.005 | < 0.0004 | 0.055 |
| MAY 22,85 | APR 23,85 | UG 0.010 | < 0.0002 | 0.009 | 0.132 | 0.007 | < 0.0004 | 0.109 |
| JUN 18,85 | MAY 22,85 | 0.007 | < 0.0002 | 0.005 | 0.067 | 0.005 | < 0.0004 | 0.049 |
| JUL 16,85 | JUN 18,85 | 0.003 | 0.0010 | 0.007 | 0.036 | 0.007 | < 0.0004 | 0.032 |
| AUG 13,85 | JUL 16,85 | 0.005 | 0.0003 | 0.010 | 0.075 | 0.009 | < 0.0004 | 0.108 |
| SEP 10,85 | AUG 13,85 | 0.001 | 0.0011 | 0.004 | 0.021 | 0.002 | < 0.0004 | 0.024 |
| OCT 8,85 | SEP 10,85 | 0.005 | 0.0004 | 0.020 | 0.053 | 0.017 | 0.0004 | 0.030 |
| NOV 5,85 | OCT 8,85 | < 0.001 | 0.0003 | 0.001 | 0.013 | 0.005 | < 0.0004 | 0.013 |
| DEC 4,85 | NOV 5,85 | ***** | ***** | ***** | ***** | ***** | ***** | ***** |
| DEC 31,85 | DEC 4,85 | 0.008 | 0.0010 | 0.015 | 0.073 | 0.009 | 0.0006 | 0.102 |

ONTARIO MINISTRY OF THE ENVIRONMENT
 CUMULATIVE SAMPLING ANALYSIS RESULTS
 APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : PALMERSTON/CUMULATIVE PRECIP.

#08

PAGE : 3

| REMOVAL DATE | EXPOSURE DATE | COPPER MG/L | CADMIUM MG/L | FREE H+ MG/L |
|-----------------|------------------|----------------|-----------------|-----------------|
| JAN 29,85 | DEC 31,84 | 0.0010 | 0.00008 | 0.0145 |
| FEB 26,85 | JAN 29,85 | 0.0007 | D 0.00040 | 0.0479 |
| MAR 26,85 | FEB 26,85 | 0.0017 | D 0.00030 | D 0.0263 |
| APR 23,85 | MAR 26,85 | 0.0015 | 0.00008 | 0.0234 |
| MAY 22,85 | APR 23,85 | 0.0010 | 0.00009 | LG 0.0240 |
| JUN 18,85 | MAY 22,85 | 0.0020 | 0.00006 | B 0.0017 |
| JUL 16,85 | JUN 18,85 | 0.0031 | 0.00003 | 0.0288 |
| AUG 13,85 | JUL 16,85 | 0.0034 | 0.00016 | 0.0661 |
| SEP 10,85 | AUG 13,85 | 0.0008 | 0.00005 | 0.0646 |
| OCT 8,85 | SEP 10,85 | 0.0006 | 0.00042 | 0.0437 |
| NOV 5,85 | OCT 8,85 | < 0.0003 | 0.00005 | 0.0372 |
| DEC 4,85 | NOV 5,85 | ***** | ***** | ***** |
| DEC 31,85 | DEC 4,85 | 0.0021 | 0.00031 | 0.0813 |

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : PORT STANLEY/CUMULATIVE PRECIP.

#03

PAGE : 1

| REMOVAL DATE | EXPOSURE DATE | SAMPLING START HR. | END HR. | SAMPLE TYPE 01-RAIN 02-SNOW 03-COMP/04-OTHER | GAUGE DEPTH(MM) | GAUGE TYPE 02,03-APIOS 09-AES | SAMPLE NUMBER | PROJECT CODE 02-APIOS 03-SPECIAL | SUBPROJECT CODE 01-MOE 03-AES | SAMPLER EFFICI- ENCY (%) | COMMENTS FIELD OFFICE |
|-----------------|------------------|--------------------------|------------|--|--------------------|--|------------------|---|--|-----------------------------------|--------------------------|
| JAN 29,85 | JAN 2,85 | 1430 | 900 | 2 | 29.0 | 2 | 19757 | 2 | 1 | 43 | N |
| FEB 26,85 | JAN 29,85 | 900 | 900 | 3 | 107.0 | 2 | 19793 | 2 | 1 | 80 | |
| MAR 26,85 | FEB 26,85 | 900 | 930 | 3 | 71.0 | 2 | 19815 | 2 | 1 | 80 | |
| APR 23,85 | MAR 26,85 | 930 | 900 | 3 | 99.0 | 3 | 19833 | 2 | 1 | 87 | |
| MAY 21,85 | APR 23,85 | 900 | 1330 | 1 | 61.0 | 3 | 19846 | 2 | 1 | 53 | CD |
| JUN 18,85 | MAY 21,85 | 1330 | 900 | 1 | 108.0 | 3 | 19881 | 2 | 1 | 93 | |
| JUL 16,85 | JUN 18,85 | 900 | 900 | 1 | 68.0 | 3 | 19903 | 2 | 1 | 60 | |
| AUG 13,85 | JUL 16,85 | 900 | 900 | 1 | 13.0 | 3 | 19927 | 2 | 1 | 85 | A |
| SEP 10,85 | AUG 13,85 | 900 | 900 | 1 | 220.0 | 3 | 19949 | 2 | 1 | 72 | |
| OCT 8,85 | SEP 10,85 | 900 | 900 | 1 | 18.0 | 3 | 19971 | 2 | 1 | 90 | |
| NOV 5,85 | OCT 8,85 | 900 | 930 | 1 | 140.0 | 3 | 19981 | 2 | 1 | 100 | |
| DEC 3,85 | NOV 5,85 | 930 | 930 | 3 | 105.0 | 3 | 74015 | 2 | 1 | U 83 | CG |
| DEC 31,85 | DEC 3,85 | 930 | 930 | 2 | 45.0 | 3 | 74051 | 2 | 1 | 50 | |

| REMOVAL DATE | EXPOSURE DATE | VOLUME ML | CONDUCT. UMHO/CM | PH LAB | TOTAL H+ GRAN MG/L | SULPHATE MG/L | NITRATE AS N MG/L | CALCIUM MG/L |
|-----------------|------------------|--------------|---------------------|-----------|--------------------------|------------------|-------------------------|-----------------|
| JAN 29,85 | JAN 2,85 | 405.0 | 19.5 | U 6.48 | U 0.0196 | 2.70 | 0.81 | U 1.98 |
| FEB 26,85 | JAN 29,85 | 2785.0 | 39.2 | 4.14 | 0.1040 | 2.85 | 0.63 | ***** |
| MAR 26,85 | FEB 26,85 | 1847.0 | 40.2 | 4.16 | 0.0960 | 3.90 | 0.69 | 0.38 |
| APR 23,85 | MAR 26,85 | 2819.0 | 27.3 | 4.48 | 0.0588 | 3.50 | 0.53 | 0.61 |
| MAY 21,85 | APR 23,85 | 1067.0 | 46.1 | 4.18 | 0.0970 | 5.85 | UG 1.03 | 0.93 |
| JUN 18,85 | MAY 21,85 | 3287.0 | 38.1 | 4.19 | 0.0948 | 4.25 | 0.56 | 0.27 |
| JUL 16,85 | JUN 18,85 | 1346.0 | 29.6 | 4.37 | 0.0686 | 3.45 | 0.52 | 0.50 |
| AUG 13,85 | JUL 16,85 | 361.0 | 75.1 | 3.90 | 0.1840 | UG 8.30 | UG 0.98 | 0.63 |
| SEP 10,85 | AUG 13,85 | 5180.0 | 46.7 | 4.04 | 0.1210 | 4.25 | 0.57 | 0.19 |
| OCT 8,85 | SEP 10,85 | 528.0 | 32.0 | UG 4.86 | 0.0396 | 6.40 | 0.86 | UG 2.12 |
| NOV 5,85 | OCT 8,85 | 4568.0 | 24.7 | 4.24 | 0.0789 | 2.70 | 0.43 | 0.20 |
| DEC 3,85 | NOV 5,85 | 2852.0 | 31.1 | 4.26 | 0.0885 | 2.70 | 0.47 | 0.16 |
| DEC 31,85 | DEC 3,85 | 735.0 | 38.3 | 4.37 | 0.0835 | 3.80 | 1.14 | 1.19 |

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : PORT STANLEY/CUMULATIVE PRECIP.

#03

PAGE 1 2

| REMOVAL DATE | EXPOSURE DATE | CHLORIDE MG/L | KJELDAHL AS N MG/L | MAGNESIUM MG/L | POTASSIUM MG/L | SODIUM MG/L | AMMONIUM AS N MG/L | PHOSPHOR MG/L |
|-----------------|------------------|------------------|--------------------------|-------------------|-------------------|----------------|--------------------------|------------------|
| JAN 29,85 | JAN 2,85 | 0.51 | 0.61 | 0.400 | 0.105 | 0.180 | 0.175 | 0.123 |
| FEB 26,85 | JAN 29,85 | 0.39 | 0.33 | ***** | ***** | ***** | 0.240 | 0.006 |
| MAR 26,85 | FEB 26,85 | 0.19 | 0.65 | 0.065 | <W 0.005 | 0.060 | 0.490 | 0.007 |
| APR 23,85 | MAR 26,85 | 0.16 | 0.72 | 0.065 | 0.035 | 0.080 | 0.610 | 0.010 |
| MAY 21,85 | APR 23,85 | 0.18 | UG 1.34 | 0.175 | 0.100 | 0.055 | 1.100 | 0.046 |
| JUN 18,85 | MAY 21,85 | 0.14 | 0.59 | 0.045 | 0.040 | 0.050 | 0.475 | <T 0.003 |
| JUL 16,85 | JUN 18,85 | 0.11 | 0.44 | 0.095 | 0.075 | 0.030 | 0.480 | 0.010 |
| AUG 13,85 | JUL 16,85 | 0.22 | 0.84 | 0.105 | 0.050 | 0.055 | 0.760 | 0.007 |
| SEP 10,85 | AUG 13,85 | 0.11 | LG 0.33 | 0.025 | <T 0.010 | 0.025 | 0.290 | <T 0.004 |
| OCT 8,85 | SEP 10,85 | 0.27 | 0.72 | UG 0.410 | 0.100 | 0.090 | 0.630 | 0.034 |
| NOV 5,85 | OCT 8,85 | 0.10 | 0.15 | 0.040 | <T 0.015 | 0.040 | 0.145 | <W 0.001 |
| DEC 3,85 | NOV 5,85 | 0.15 | 0.27 | 0.045 | <T 0.015 | 0.050 | 0.225 | <T 0.002 |
| DEC 31,85 | DEC 3,85 | 0.45 | 0.62 | 0.220 | 0.060 | 0.190 | 0.520 | 0.007 |

| REMOVAL DATE | EXPOSURE DATE | MANGANESE MG/L | NICKEL MG/L | ZINC MG/L | IRON MG/L | LEAD MG/L | VANADIUM MG/L | ALUMINUM MG/L |
|-----------------|------------------|-------------------|----------------|--------------|--------------|--------------|------------------|------------------|
| JAN 29,85 | JAN 2,85 | UG 0.030 | 0.0018 | 0.010 | UG 0.886 | 0.019 | 0.0014 | UG 0.892 |
| FEB 26,85 | JAN 29,85 | 0.002 | < 0.0002 | 0.004 | 0.020 | 0.006 | < 0.0004 | 0.034 |
| MAR 26,85 | FEB 26,85 | 0.005 | 0.0006 | 0.009 | 0.117 | 0.015 | 0.0004 | 0.087 |
| APR 23,85 | MAR 26,85 | 0.006 | 0.0006 | 0.007 | 0.075 | 0.003 | < 0.0004 | 0.089 |
| MAY 21,85 | APR 23,85 | UG 0.016 | 0.0009 | 0.014 | UG 0.269 | 0.011 | 0.0006 | UG 0.278 |
| JUN 18,85 | MAY 21,85 | 0.004 | < 0.0002 | 0.004 | 0.025 | 0.002 | < 0.0004 | 0.023 |
| JUL 16,85 | JUN 18,85 | 0.007 | 0.0021 | 0.019 | 0.106 | 0.019 | < 0.0004 | 0.103 |
| AUG 13,85 | JUL 16,85 | 0.005 | 0.0002 | 0.022 | 0.062 | 0.007 | < 0.0004 | 0.108 |
| SEP 10,85 | AUG 13,85 | 0.001 | 0.0012 | 0.004 | 0.016 | 0.003 | < 0.0004 | 0.023 |
| OCT 8,85 | SEP 10,85 | UG 0.014 | 0.0013 | 0.008 | 0.140 | 0.005 | < 0.0004 | 0.141 |
| NOV 5,85 | OCT 8,85 | 0.001 | 0.0002 | 0.001 | 0.015 | 0.004 | < 0.0004 | 0.030 |
| DEC 3,85 | NOV 5,85 | 0.002 | < 0.0002 | 0.005 | 0.018 | 0.001 | < 0.0004 | 0.027 |
| DEC 31,85 | DEC 3,85 | 0.010 | 0.0006 | 0.021 | 0.143 | 0.007 | < 0.0004 | 0.140 |

ONTARIO MINISTRY OF THE ENVIRONMENT
 CUMULATIVE SAMPLING ANALYSIS RESULTS
 APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : PORT STANLEY/CUMULATIVE PRECIP.

#03

PAGE 1 3

| REMOVAL DATE | EXPOSURE DATE | COPPER MG/L | CADMIUM MG/L | FREE H+ MG/L |
|-----------------|------------------|----------------|-----------------|-----------------|
| JAN 29,85 | JAN 2,85 | 0.0025 | 0.00015 | U 0.0003 |
| FEB 26,85 | JAN 29,85 | 0.0003 | 0.00006 | 0.0724 |
| MAR 26,85 | FEB 26,85 | 0.0015 | 0.00012 | 0.0692 |
| APR 23,85 | MAR 26,85 | 0.0006 | 0.00011 | 0.0331 |
| MAY 21,85 | APR 23,85 | 0.0043 | 0.00014 | 0.0661 |
| JUN 18,85 | MAY 21,85 | 0.0019 | 0.00006 | 0.0646 |
| JUL 16,85 | JUN 18,85 | 0.0033 | 0.00003 | 0.0427 |
| AUG 13,85 | JUL 16,85 | 0.0034 | 0.00006 | 0.1259 |
| SEP 10,85 | AUG 13,85 | 0.0007 | 0.00006 | 0.0912 |
| OCT 8,85 | SEP 10,85 | 0.0027 | 0.00010 | LG 0.0138 |
| NOV 5,85 | OCT 8,85 | < 0.0002 | 0.00003 | 0.0575 |
| DEC 3,85 | NOV 5,85 | 0.0005 | 0.00006 | 0.0550 |
| DEC 31,85 | DEC 3,85 | 0.0027 | 0.00035 | 0.0427 |

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : SHALLOW LAKE/CUMULATIVE PRECIP.

#09

PAGE : 1

| REMOVAL DATE | EXPOSURE DATE | SAMPLING START HR. | SAMPLING END HR. | SAMPLE TYPE 01-RAIN 02-SNOW 03-COMP/04-OTHER | GAUGE DEPTH(MM) | GAUGE TYPE 02,03-APIOS 09-AES | SAMPLE NUMBER | PROJECT CODE 02-APIOS 03-SPECIAL | SUBPROJECT CODE 01-MOE 03-AES | SAMPLER EFFICI- ENCY (%) | COMMENTS FIELD OFFICE |
|-----------------|------------------|--------------------------|------------------------|--|--------------------|--|------------------|---|--|-----------------------------------|--------------------------|
| JAN 29,85 | JAN 2,85 | 730 | 915 | 2 | 68.0 | 2 | 19762 | 2 | 1 | U 4 | G |
| FEB 26,85 | JAN 29,85 | 915 | 800 | 1 | 110.0 | 2 | 19789 | 2 | 1 | 70 | |
| MAR 26,85 | FEB 26,85 | 800 | 830 | 3 | 89.0 | 2 | 19817 | 2 | 1 | 41 | N |
| APR 23,85 | MAR 26,85 | 830 | 830 | 3 | 108.0 | 2 | 19838 | 2 | 1 | 91 | A |
| MAY 21,85 | APR 23,85 | 830 | 815 | 1 | 60.0 | 3 | 19850 | 2 | 1 | 92 | CD |
| JUN 18,85 | MAY 21,85 | 815 | 815 | 1 | 47.0 | 3 | 19885 | 2 | 1 | 89 | |
| JUL 16,85 | JUN 18,85 | 815 | 830 | 1 | 92.0 | 3 | 19907 | 2 | 1 | U 89 | G |
| AUG 15,85 | JUL 16,85 | 830 | 1800 | 1 | 53.0 | 3 | 19931 | 2 | 1 | 88 | A |
| SEP 10,85 | AUG 15,85 | 1800 | 700 | 1 | 176.0 | 3 | 19953 | 2 | 1 | 90 | |
| OCT 8,85 | SEP 10,85 | 700 | 745 | 1 | 104.0 | 3 | 19975 | 2 | 1 | 39 | N |
| NOV 5,85 | OCT 8,85 | 745 | 745 | 1 | 115.0 | 3 | 19985 | 2 | 1 | 86 | |
| DEC 3,85 | NOV 5,85 | 730 | 830 | 3 | 96.0 | 3 | 74019 | 2 | 1 | U 87 | CGQE |
| DEC 31,85 | DEC 3,85 | 830 | 900 | 2 | 58.0 | 3 | 74055 | 2 | 1 | 86 | |

| REMOVAL DATE | EXPOSURE DATE | VOLUME ML | CONDUCT. UMHO/CM | PH LAB | TOTAL H+ GRAN MG/L | SULPHATE MG/L | NITRATE AS N MG/L | CALCIUM MG/L |
|-----------------|------------------|--------------|---------------------|-----------|--------------------------|------------------|-------------------------|-----------------|
| JAN 29,85 | JAN 2,85 | 105.0 | ***** | ***** | ***** | ***** | ***** | ***** |
| FEB 26,85 | JAN 29,85 | 2516.0 | 28.7 | 4.26 | 0.0811 | 1.70 | 0.52 | ***** |
| MAR 26,85 | FEB 26,85 | 1195.0 | 43.4 | 4.16 | 0.1060 | 3.95 | 0.99 | 0.56 |
| APR 23,85 | MAR 26,85 | 3212.0 | 26.1 | 4.52 | 0.0555 | 3.30 | 0.57 | 0.54 |
| MAY 21,85 | APR 23,85 | 1793.0 | 31.9 | 4.39 | 0.0633 | 4.30 | 0.67 | 0.73 |
| JUN 18,85 | MAY 21,85 | 1363.0 | 36.0 | 4.35 | 0.0749 | 4.65 | 0.66 | 0.60 |
| JUL 16,85 | JUN 18,85 | 2662.0 | 24.2 | 4.50 | 0.0576 | 2.95 | 0.41 | 0.38 |
| AUG 15,85 | JUL 16,85 | 1528.0 | 44.4 | 4.19 | 0.1050 | 5.00 | 0.62 | 0.54 |
| SEP 10,85 | AUG 15,85 | 5150.0 | 32.2 | 4.22 | 0.0835 | 3.25 | 0.39 | 0.17 |
| OCT 8,85 | SEP 10,85 | 1345.0 | 33.0 | 4.26 | 0.0838 | 3.30 | 0.54 | 0.26 |
| NOV 5,85 | OCT 8,85 | 3245.0 | 23.8 | 4.35 | 0.0667 | 2.20 | 0.31 | 0.15 |
| DEC 3,85 | NOV 5,85 | 2736.0 | ***** | ***** | ***** | ***** | ***** | ***** |
| DEC 31,85 | DEC 3,85 | 1625.0 | 28.3 | 4.33 | 0.0770 | 2.00 | 0.64 | 0.16 |

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : SHALLOW LAKE/CUMULATIVE PRECIP.

#09

PAGE : 2

| REMOVAL DATE | EXPOSURE DATE | CHLORIDE MG/L | KJELDAHL AS N MG/L | MAGNESIM MG/L | POTASSIM MG/L | SODIUM MG/L | AMMONIUM AS N MG/L | PHOSPHOR MG/L |
|-----------------|------------------|------------------|--------------------------|------------------|------------------|----------------|--------------------------|------------------|
| JAN 29,85 | JAN 2,85 | ***** | ***** | ***** | ***** | ***** | ***** | ***** |
| FEB 26,85 | JAN 29,85 | 0.14 | 0.24 | ***** | ***** | ***** | ***** | ***** |
| MAR 26,85 | FEB 26,85 | 0.27 | 0.88 | 0.070 | <M 0.005 | 0.120 | 0.160 | 0.007 |
| APR 23,85 | MAR 26,85 | 0.13 | 0.76 | 0.075 | 0.035 | 0.070 | D 0.645 | 0.014 |
| MAY 21,85 | APR 23,85 | 0.08 | 0.91 | 0.140 | 0.035 | 0.025 | 0.660 | 0.009 |
| JUN 18,85 | MAY 21,85 | 0.12 | 0.83 | 0.120 | 0.050 | 0.040 | 0.785 | 0.014 |
| JUL 16,85 | JUN 18,85 | 0.17 | 0.60 | 0.070 | 0.105 | D 0.100 | 0.715 | <T 0.005 |
| AUG 15,85 | JUL 16,85 | 0.13 | 0.60 | 0.095 | <T 0.020 | <T 0.020 | 0.460 | <T 0.003 |
| SEP 10,85 | AUG 15,85 | 0.07 | 0.49 | 0.030 | <T 0.015 | 0.025 | 0.540 | 0.006 |
| OCT 8,85 | SEP 10,85 | 0.10 | 0.43 | 0.050 | 0.040 | 0.025 | 0.370 | 0.007 |
| NOV 5,85 | OCT 8,85 | <T 0.06 | 0.24 | 0.020 | <T 0.020 | 0.030 | 0.415 | <T 0.004 |
| DEC 3,85 | NOV 5,85 | ***** | ***** | ***** | ***** | ***** | 0.210 | <T 0.003 |
| DEC 31,85 | DEC 3,85 | 0.20 | 0.36 | 0.050 | <T 0.020 | 0.100 | ***** | ***** |
| | | | | | | | 0.305 | <T 0.005 |

| REMOVAL DATE | EXPOSURE DATE | MANGANSE MG/L | NICKEL MG/L | ZINC MG/L | IRON MG/L | LEAD MG/L | VANADIUM MG/L | ALUMINUM MG/L |
|-----------------|------------------|------------------|----------------|--------------|--------------|--------------|------------------|------------------|
| JAN 29,85 | JAN 2,85 | ***** | ***** | ***** | ***** | ***** | ***** | ***** |
| FEB 26,85 | JAN 29,85 | < 0.001 | < 0.0002 | 0.003 | 0.007 | 0.006 | < 0.0004 | 0.013 |
| MAR 26,85 | FEB 26,85 | 0.008 | < 0.0002 | 0.007 | 0.089 | 0.011 | D 0.0009 | 0.101 |
| APR 23,85 | MAR 26,85 | 0.005 | 0.0002 | 0.006 | 0.069 | 0.007 | < 0.0004 | 0.070 |
| MAY 21,85 | APR 23,85 | UG 0.010 | 0.0012 | 0.005 | 0.082 | 0.006 | < 0.0004 | 0.076 |
| JUN 18,85 | MAY 21,85 | UG 0.009 | < 0.0002 | 0.004 | 0.103 | 0.003 | < 0.0004 | 0.103 |
| JUL 16,85 | JUN 18,85 | 0.004 | 0.0003 | U 0.794 | 0.030 | 0.007 | < 0.0004 | 0.028 |
| AUG 15,85 | JUL 16,85 | 0.003 | < 0.0002 | 0.005 | 0.030 | 0.002 | < 0.0004 | 0.026 |
| SEP 10,85 | AUG 15,85 | 0.001 | 0.0012 | 0.004 | 0.016 | 0.005 | < 0.0004 | 0.016 |
| OCT 8,85 | SEP 10,85 | D 0.002 | 0.0002 | 0.003 | 0.036 | 0.004 | D 0.0005 | 0.031 |
| NOV 5,85 | OCT 8,85 | < 0.001 | 0.0004 | 0.001 | 0.010 | 0.002 | < 0.0004 | 0.019 |
| DEC 3,85 | NOV 5,85 | ***** | ***** | ***** | ***** | ***** | ***** | ***** |
| DEC 31,85 | DEC 3,85 | 0.001 | 0.0002 | 0.005 | 0.018 | 0.004 | < 0.0004 | 0.027 |

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : SHALLOW LAKE/CUMULATIVE PRECIP.

#09

PAGE : 3

| REMOVAL DATE | EXPOSURE DATE | COPPER MG/L | CADMIUM MG/L | FREE H+ MG/L |
|-----------------|------------------|----------------|-----------------|-----------------|
| JAN 29,85 | JAN 2,85 | ***** | ***** | ***** |
| FEB 26,85 | JAN 29,85 | < 0.0003 | < 0.00004 | 0.0550 |
| MAR 26,85 | FEB 26,85 | 0.0011 | 0.00015 | 0.0692 |
| APR 23,85 | MAR 26,85 | 0.0014 | 0.00009 | 0.0302 |
| MAY 21,85 | APR 23,85 | < 0.0003 | 0.00010 | 0.0407 |
| JUN 18,85 | MAY 21,85 | 0.0016 | 0.00008 | 0.0447 |
| JUL 16,85 | JUN 18,85 | 0.0018 | U 0.00150 | 0.0316 |
| AUG 15,85 | JUL 16,85 | 0.0006 | 0.00002 | 0.0646 |
| SEP 10,85 | AUG 15,85 | 0.0007 | 0.00006 | 0.0603 |
| OCT 8,85 | SEP 10,85 | 0.0007 | 0.00005 | 0.0550 |
| NOV 5,85 | OCT 8,85 | 0.0003 | 0.00003 | 0.0447 |
| DEC 3,85 | NOV 5,85 | ***** | ***** | ***** |
| DEC 31,85 | DEC 3,85 | 0.0012 | 0.00010 | 0.0468 |

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : WATERLOO/CUMULATIVE PRECIP.

#07

PAGE : 1

| REMOVAL DATE | EXPOSURE DATE | SAMPLING START HR. | END HR. | SAMPLE TYPE 01-RAIN 02-SNOW 03-COMP/04-OTHER | GAUGE DEPTH(MM) | GAUGE TYPE 02,03-APIOS 09-AES | SAMPLE NUMBER | PROJECT CODE 02-APIOS 03-SPECIAL | SUBPROJECT CODE 01-MOE 03-AES | SAMPLER EFFICI- ENCY (%) | COMMENTS FIELD OFFICE |
|-----------------|------------------|--------------------------|------------|--|--------------------|--|------------------|---|--|-----------------------------------|--------------------------|
| JAN 29,85 | JAN 1,85 | 930 | 825 | 2 | 47.0 | 2 | 19764 | 2 | 1 | 78 | |
| FEB 26,85 | JAN 29,85 | 825 | 820 | 3 | 134.0 | 2 | 19786 | 2 | 1 | 57 | |
| MAR 26,85 | FEB 26,85 | 820 | 815 | 3 | 94.0 | 2 | 19812 | 2 | 1 | 27 | N |
| APR 23,85 | MAR 26,85 | 815 | 830 | 3 | 95.0 | 2 | 19842 | 2 | 1 | 81 | |
| MAY 21,85 | APR 23,85 | 830 | 845 | 1 | 48.0 | 2 | 19853 | 2 | 1 | 55 | CD H |
| JUN 18,85 | MAY 21,85 | 845 | 830 | 1 | 76.0 | 3 | 19887 | 2 | 1 | 95 | AC |
| JUL 16,85 | JUN 18,85 | 830 | 810 | 1 | 135.0 | 3 | 19909 | 2 | 1 | U 16 | HQ |
| AUG 13,85 | JUL 16,85 | 810 | 830 | 1 | 26.0 | 3 | 19934 | 2 | 1 | 84 | ACBD |
| SEP 10,85 | AUG 13,85 | 830 | 845 | 1 | 189.0 | 3 | 19956 | 2 | 1 | 83 | AC |
| OCT 8,85 | SEP 10,85 | 900 | 850 | 1 | 31.0 | 3 | 19978 | 2 | 1 | 83 | |
| NOV 5,85 | OCT 8,85 | 850 | 830 | 1 | 121.0 | 3 | 19988 | 2 | 1 | 72 | |
| DEC 3,85 | NOV 5,85 | 830 | 900 | 3 | 70.0 | 3 | 74022 | 2 | 1 | U 79 | G C |
| DEC 31,85 | DEC 3,85 | 900 | 830 | 2 | 59.0 | 3 | 74058 | 2 | 1 | 52 | |

| REMOVAL DATE | EXPOSURE DATE | VOLUME ML | CONDUCT. UMHO/CM | PH LAB | TOTAL H+ GRAN MG/L | SULPHATE MG/L | NITRATE AS N MG/L | CALCIUM MG/L |
|-----------------|------------------|--------------|---------------------|-----------|--------------------------|------------------|-------------------------|-----------------|
| JAN 29,85 | JAN 1,85 | 1192.0 | 18.0 | 4.50 | 0.0607 | LG 1.55 | 0.49 | 0.31 |
| FEB 26,85 | JAN 29,85 | 2485.0 | 31.8 | 4.25 | 0.0818 | 2.10 | 0.55 | <T 0.04 |
| MAR 26,85 | FEB 26,85 | 843.0 | 34.9 | 4.28 | 0.0824 | 3.20 | 0.72 | 0.51 |
| APR 23,85 | MAR 26,85 | 2518.0 | 25.9 | 4.39 | 0.0665 | 2.95 | 0.46 | 0.52 |
| MAY 21,85 | APR 23,85 | 866.0 | 43.0 | UG 4.91 | 0.0411 | UG 8.95 | UG 1.28 | UG 2.52 |
| JUN 18,85 | MAY 21,85 | 2367.0 | 29.3 | 4.41 | 0.0648 | 3.65 | 0.55 | 0.47 |
| JUL 16,85 | JUN 18,85 | 740.0 | LG 15.0 | UG 4.75 | 0.0390 | LG 2.00 | LG 0.22 | 0.40 |
| AUG 13,85 | JUL 16,85 | 716.0 | 44.1 | UG 6.90 | 0.0284 | UG 10.40 | LG 0.26 | A 3.25 |
| SEP 10,85 | AUG 13,85 | 5130.0 | 43.5 | 4.07 | 0.1110 | 4.15 | 0.50 | 0.17 |
| OCT 8,85 | SEP 10,85 | 841.0 | 40.9 | 4.20 | 0.0999 | 4.40 | 0.69 | 0.46 |
| NOV 5,85 | OCT 8,85 | 2854.0 | 27.5 | 4.31 | 0.0743 | 2.60 | 0.39 | 0.21 |
| DEC 3,85 | NOV 5,85 | 1810.0 | LG 5.2 | UG 5.30 | LG 0.0255 | LG 0.35 | <T 0.05 | LG 0.04 |
| DEC 31,85 | DEC 3,85 | 1010.0 | 48.9 | 4.11 | 0.1220 | 3.30 | 1.28 | 0.34 |

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : WATERLOO/CUMULATIVE PRECIP.

#07

PAGE : 2

| REMOVAL DATE | EXPOSURE DATE | CHLORIDE MG/L | KJELDAHL AS N MG/L | MAGNESIM MG/L | POTASSIM MG/L | SODIUM MG/L | AMMONIUM AS N MG/L | PHOSPHOR MG/L |
|-----------------|------------------|------------------|--------------------------|------------------|------------------|----------------|--------------------------|------------------|
| JAN 29,85 | JAN 1,85 | 0.32 | 0.40 | 0.055 | 0.060 | 0.145 | 0.220 | 0.021 |
| FEB 26,85 | JAN 29,85 | 0.33 | 0.27 | 0.030 | 0.035 | 0.185 | 0.230 | <T 0.005 |
| MAR 26,85 | FEB 26,85 | 0.25 | 0.67 | 0.095 | <T 0.005 | 0.110 | 0.440 | 0.012 |
| APR 23,85 | MAR 26,85 | 0.22 | 0.42 | 0.065 | 0.020 | 0.130 | 0.355 | <T 0.005 |
| MAY 21,85 | APR 23,85 | 0.36 | UG 1.81 | UG 0.605 | 0.110 | 0.115 | UG 1.450 | 0.037 |
| JUN 18,85 | MAY 21,85 | 0.12 | 0.71 | 0.085 | 0.040 | 0.045 | 0.645 | <T 0.002 |
| JUL 16,85 | JUN 18,85 | <T 0.06 | LG 0.25 | 0.080 | 0.025 | 0.020 | LG 0.215 | 0.006 |
| AUG 13,85 | JUL 16,85 | 0.41 | UG 3.27 | UG 0.490 | A 3.350 | 0.080 | 1.100 | U 0.510 |
| SEP 10,85 | AUG 13,85 | 0.09 | 0.40 | 0.030 | <T 0.020 | <T 0.015 | 0.345 | 0.006 |
| OCT 8,85 | SEP 10,85 | 0.22 | 0.64 | 0.080 | 0.065 | 0.065 | 0.565 | 0.011 |
| NOV 5,85 | OCT 8,85 | 0.11 | 0.25 | 0.040 | <T 0.015 | 0.030 | 0.225 | <T 0.002 |
| DEC 3,85 | NOV 5,85 | <T 0.03 | LG 0.08 | <T 0.010 | <T 0.010 | 0.020 | LG 0.030 | <T 0.002 |
| DEC 31,85 | DEC 3,85 | 0.54 | 0.80 | 0.080 | 0.035 | 0.200 | 0.655 | 0.013 |

| REMOVAL DATE | EXPOSURE DATE | MANGANSE MG/L | NICKEL MG/L | ZINC MG/L | IRON MG/L | LEAD MG/L | VANADIUM MG/L | ALUMINUM MG/L |
|-----------------|------------------|------------------|----------------|--------------|--------------|--------------|------------------|------------------|
| JAN 29,85 | JAN 1,85 | 0.007 | 0.0005 | 0.007 | 0.030 | 0.010 | 0.0007 | 0.051 |
| FEB 26,85 | JAN 29,85 | 0.001 | 0.0002 | 0.006 | 0.034 | 0.009 | < 0.0004 | 0.016 |
| MAR 26,85 | FEB 26,85 | 0.010 | 0.0030 | 0.026 | 0.277 | 0.017 | 0.0013 | 0.211 |
| APR 23,85 | MAR 26,85 | 0.005 | 0.0002 | 0.008 | 0.077 | 0.008 | < 0.0004 | 0.054 |
| MAY 21,85 | APR 23,85 | UG 0.021 | 0.0021 | UG 0.033 | UG 0.390 | UG 0.021 | 0.0008 | UG 0.319 |
| JUN 18,85 | MAY 21,85 | 0.003 | < 0.0002 | 0.006 | 0.066 | 0.004 | < 0.0004 | 0.027 |
| JUL 16,85 | JUN 18,85 | 0.004 | 0.0010 | 0.009 | UG 0.314 | 0.008 | < 0.0004 | 0.051 |
| AUG 13,85 | JUL 16,85 | UG 0.020 | 0.0002 | 0.013 | 0.120 | 0.002 | 0.0008 | 0.069 |
| SEP 10,85 | AUG 13,85 | 0.001 | 0.0016 | 0.004 | 0.025 | 0.008 | < 0.0004 | 0.018 |
| OCT 8,85 | SEP 10,85 | 0.006 | 0.0006 | 0.013 | 0.098 | 0.008 | < 0.0004 | 0.055 |
| NOV 5,85 | OCT 8,85 | 0.002 | < 0.0002 | 0.003 | 0.037 | 0.008 | < 0.0004 | 0.018 |
| DEC 3,85 | NOV 5,85 | < 0.001 | 0.0004 | 0.003 | 0.014 | 0.004 | < 0.0004 | 0.022 |
| DEC 31,85 | DEC 3,85 | 0.006 | 0.0006 | 0.019 | 0.124 | 0.009 | < 0.0004 | 0.101 |

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : WATERLOO/CUMULATIVE PRECIP.

#07

PAGE : 3

| REMOVAL DATE | EXPOSURE DATE | COPPER MG/L | CADMIUM MG/L | FREE H+ MG/L |
|-----------------|------------------|----------------|-----------------|-----------------|
| JAN 29,85 | JAN 1,85 | 0.0009 | 0.00016 | 0.0316 |
| FEB 26,85 | JAN 29,85 | < 0.0003 | 0.00116 | 0.0562 |
| MAR 26,85 | FEB 26,85 | 0.0035 | 0.00227 | 0.0525 |
| APR 23,85 | MAR 26,85 | 0.0023 | 0.00085 | 0.0407 |
| MAY 21,85 | APR 23,85 | 0.0037 | 0.00151 | LG 0.0123 |
| JUN 18,85 | MAY 21,85 | 0.0014 | 0.00166 | 0.0389 |
| JUL 16,85 | JUN 18,85 | 0.0059 | U 0.00170 | LG 0.0178 |
| AUG 13,85 | JUL 16,85 | < 0.0005 | UG 0.00119 | LG 0.0001 |
| SEP 10,85 | AUG 13,85 | 0.0005 | 0.00029 | 0.0851 |
| OCT 8,85 | SEP 10,85 | 0.0020 | UG 0.00130 | 0.0631 |
| NOV 5,85 | OCT 8,85 | 0.0045 | 0.00079 | 0.0490 |
| DEC 3,85 | NOV 5,85 | 0.0008 | 0.00009 | LG 0.0050 |
| DEC 31,85 | DEC 3,85 | 0.0018 | 0.00071 | 0.0776 |

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : WILKESPORT/CUMULATIVE PRECIP.

#04

PAGE : 1

| REMOVAL DATE | EXPOSURE DATE | SAMPLING START HR. | END HR. | SAMPLE TYPE 01-RAIN 02-SNOW 03-COMP/04-OTHER | GAUGE DEPTH(MM) | GAUGE TYPE 02,03-APIOS 09-AES | SAMPLE NUMBER | PROJECT CODE 02-APIOS 03-SPECIAL | SUBPROJECT CODE 01-MOE 03-AES | SAMPLER EFFICI- ENCY (%) | COMMENTS FIELD OFFICE |
|-----------------|------------------|--------------------------|------------|--|--------------------|--|------------------|---|--|-----------------------------------|--------------------------|
| JAN 29,85 | JAN 2,85 | 1230 | 1230 | 2 | 9.4 | 2 | 19759 | 2 | 1 | 57 | |
| FEB 26,85 | JAN 29,85 | 1230 | 1230 | 3 | 96.0 | 2 | 19791 | 2 | 1 | U 65 | G |
| MAR 26,85 | FEB 26,85 | 1230 | 1230 | 3 | 110.0 | 2 | 19814 | 2 | 1 | 31 | |
| APR 23,85 | MAR 26,85 | 1230 | 1300 | 3 | 76.4 | 9 | 19836 | 2 | 1 | I 75 | N |
| MAY 22,85 | APR 23,85 | 1300 | 1230 | 1 | 27.0 | 3 | 19848 | 2 | 1 | U 55 | AG |
| JUN 18,85 | MAY 22,85 | 1230 | 1230 | 1 | 81.0 | 3 | 19883 | 2 | 1 | 94 | H |
| JUL 16,85 | JUN 18,85 | 1230 | 1300 | 1 | 100.0 | 3 | 19905 | 2 | 1 | 84 | ABC |
| AUG 13,85 | JUL 16,85 | 1300 | 1130 | 1 | 56.0 | 3 | 19929 | 2 | 1 | 64 | AC |
| SEP 10,85 | AUG 13,85 | 1130 | 1245 | 1 | 194.0 | 3 | 19951 | 2 | 1 | U 81 | ABC |
| OCT 8,85 | SEP 10,85 | 1245 | 1230 | 1 | 35.0 | 3 | 19973 | 2 | 1 | 68 | CG |
| NOV 5,85 | OCT 8,85 | 1230 | 1300 | 1 | 105.0 | 3 | 19983 | 2 | 1 | U 111 | A |
| DEC 3,85 | NOV 5,85 | 1300 | 1250 | 3 | 71.0 | 3 | 74017 | 2 | 1 | 98 | CDJ |
| DEC 31,85 | DEC 3,85 | 1300 | 1000 | 2 | 34.0 | 3 | 74053 | 2 | 1 | 39 | N |

| REMOVAL DATE | EXPOSURE DATE | VOLUME ML | CONDUCT. UMHO/CM | PH LAB | TOTAL H+ GRAN MG/L | SULPHATE MG/L | NITRATE AS N MG/L | CALCIUM MG/L |
|-----------------|------------------|--------------|---------------------|-----------|--------------------------|------------------|-------------------------|-----------------|
| JAN 29,85 | JAN 2,85 | 175.0 | 56.0 | 4.74 | 0.0658 | 6.80 | UG 2.02 | ***** |
| FEB 26,85 | JAN 29,85 | 2040.0 | 30.4 | 4.28 | 0.0811 | 2.30 | 0.51 | ***** |
| MAR 26,85 | FEB 26,85 | 1123.0 | 35.9 | 4.23 | 0.0875 | 3.50 | 0.62 | 0.39 |
| APR 23,85 | MAR 26,85 | 1866.0 | 25.8 | 4.50 | 0.0568 | 3.25 | 0.51 | 0.61 |
| MAY 22,85 | APR 23,85 | 488.0 | 35.8 | U 6.81 | U 0.0269 | 6.85 | 0.70 | 1.41 |
| JUN 18,85 | MAY 22,85 | 2498.0 | 38.7 | 4.26 | 0.0845 | 4.75 | 0.63 | 0.33 |
| JUL 16,85 | JUN 18,85 | 2750.0 | UG 75.3 | 3.88 | UG 0.1750 | 7.30 | 1.00 | 0.52 |
| AUG 13,85 | JUL 16,85 | 1177.0 | ***** | 4.22 | 0.0955 | ***** | ***** | ***** |
| SEP 10,85 | AUG 13,85 | 5125.0 | 41.3 | 4.11 | 0.1050 | 4.10 | 0.53 | 0.27 |
| OCT 8,85 | SEP 10,85 | 783.0 | 34.6 | 4.32 | 0.0791 | 4.55 | 0.57 | 0.87 |
| NOV 5,85 | OCT 8,85 | 3801.0 | 22.9 | 4.48 | 0.0572 | 2.75 | 0.37 | 0.27 |
| DEC 3,85 | NOV 5,85 | 2280.0 | 33.7 | 4.21 | 0.0921 | 2.85 | 0.50 | 0.17 |
| DEC 31,85 | DEC 3,85 | 437.0 | 51.3 | 4.09 | 0.1320 | 3.70 | 1.18 | 0.40 |

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : WILKESPORT/CUMULATIVE PRECIP.

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PAGE : 2

| REMOVAL DATE | EXPOSURE DATE | CHLORIDE MG/L | KJELDAHL AS N MG/L | MAGNESIM MG/L | POTASSIM MG/L | SODIUM MG/L | AMMONIUM AS N MG/L | PHOSPHOR MG/L |
|-----------------|------------------|------------------|--------------------------|------------------|------------------|----------------|--------------------------|------------------|
| JAN 29,85 | JAN 2,85 | UG 2.90 | ***** | ***** | ***** | ***** | D 1.100 | ***** |
| FEB 26,85 | JAN 29,85 | 0.33 | 0.38 | ***** | ***** | ***** | 0.270 | 0.007 |
| MAR 26,85 | FEB 26,85 | 0.19 | 0.66 | 0.055 | <T 0.005 | 0.075 | 0.465 | 0.011 |
| APR 23,85 | MAR 26,85 | 0.20 | 0.63 | 0.085 | 0.040 | 0.115 | 0.560 | <T 0.003 |
| MAY 22,85 | APR 23,85 | 0.37 | U 3.50 | 0.250 | U 0.530 | B 0.205 | U 2.200 | U 0.235 |
| JUN 18,85 | MAY 22,85 | 0.14 | 1.05 | 0.055 | 0.045 | 0.060 | 0.845 | 0.009 |
| JUL 16,85 | JUN 18,85 | 0.26 | 0.72 | 0.085 | 0.075 | 0.035 | 0.780 | 0.010 |
| AUG 13,85 | JUL 16,85 | ***** | 0.44 | ***** | ***** | ***** | 0.400 | <T 0.004 |
| SEP 10,85 | AUG 13,85 | 0.13 | 0.42 | 0.045 | 0.025 | 0.035 | 0.340 | 0.009 |
| OCT 8,85 | SEP 10,85 | 0.23 | 0.54 | 0.175 | 0.095 | 0.080 | 0.435 | 0.016 |
| NOV 5,85 | OCT 8,85 | 0.17 | D 0.62 | 0.055 | 0.145 | 0.035 | 0.435 | D 0.068 |
| DEC 3,85 | NOV 5,85 | 0.15 | 0.29 | 0.025 | 0.025 | 0.040 | 0.270 | <T 0.002 |
| DEC 31,85 | DEC 3,85 | 0.51 | 0.69 | 0.070 | 0.045 | 0.185 | 0.510 | 0.011 |

| REMOVAL DATE | EXPOSURE DATE | MANGANSE MG/L | NICKEL MG/L | ZINC MG/L | IRON MG/L | LEAD MG/L | VANADIUM MG/L | ALUMINUM MG/L |
|-----------------|------------------|------------------|----------------|--------------|--------------|--------------|------------------|------------------|
| JAN 29,85 | JAN 2,85 | ***** | ***** | ***** | ***** | ***** | ***** | ***** |
| FEB 26,85 | JAN 29,85 | 0.001 | 0.0011 | 0.008 | 0.022 | D 0.010 | 0.0004 | 0.023 |
| MAR 26,85 | FEB 26,85 | 0.003 | 0.0004 | 0.008 | 0.040 | 0.014 | 0.0004 | 0.043 |
| APR 23,85 | MAR 26,85 | 0.004 | 0.0003 | 0.007 | 0.063 | 0.006 | < 0.0004 | 0.069 |
| MAY 22,85 | APR 23,85 | U 0.014 | 0.0012 | 0.020 | 0.217 | 0.009 | 0.0004 | 0.171 |
| JUN 18,85 | MAY 22,85 | 0.005 | < 0.0002 | 0.006 | 0.038 | 0.004 | < 0.0004 | 0.036 |
| JUL 16,85 | JUN 18,85 | UG 0.009 | 0.0005 | 0.018 | 0.084 | 0.007 | 0.0006 | 0.119 |
| AUG 13,85 | JUL 16,85 | 0.002 | < 0.0002 | 0.005 | 0.024 | 0.001 | < 0.0004 | 0.039 |
| SEP 10,85 | AUG 13,85 | 0.002 | 0.0004 | 0.005 | 0.019 | 0.005 | < 0.0004 | 0.022 |
| OCT 8,85 | SEP 10,85 | 0.005 | 0.0007 | 0.013 | 0.069 | 0.007 | < 0.0004 | 0.056 |
| NOV 5,85 | OCT 8,85 | B 0.027 | D 0.0008 | 0.004 | D 0.132 | 0.004 | D 0.0009 | D 0.081 |
| DEC 3,85 | NOV 5,85 | 0.002 | 0.0013 | 0.004 | 0.023 | 0.001 | 0.0007 | 0.030 |
| DEC 31,85 | DEC 3,85 | 0.005 | 0.0011 | 0.023 | 0.069 | 0.009 | 0.0010 | 0.091 |

ONTARIO MINISTRY OF THE ENVIRONMENT
 CUMULATIVE SAMPLING ANALYSIS RESULTS
 APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : WILKESPORT/CUMULATIVE PRECIP.

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PAGE 1 3

| REMOVAL DATE | EXPOSURE DATE | COPPER MG/L | CADMIUM MG/L | FREE H+ MG/L |
|-----------------|------------------|----------------|-----------------|-----------------|
| JAN 29,85 | JAN 2,85 | ***** | ***** | 0.0182 |
| FEB 26,85 | JAN 29,85 | D 0.0019 | 0.00016 | 0.0525 |
| MAR 26,85 | FEB 26,85 | 0.0009 | 0.00012 | 0.0589 |
| APR 23,85 | MAR 26,85 | 0.0010 | 0.00011 | 0.0316 |
| MAY 22,85 | APR 23,85 | 0.0015 | 0.00012 | U 0.0002 |
| JUN 18,85 | MAY 22,85 | 0.0005 | 0.00008 | 0.0550 |
| JUL 16,85 | JUN 18,85 | 0.0014 | 0.00013 | 0.1318 |
| AUG 13,85 | JUL 16,85 | < 0.0004 | 0.00003 | 0.0603 |
| SEP 10,85 | AUG 13,85 | 0.0006 | 0.00007 | 0.0776 |
| OCT 8,85 | SEP 10,85 | 0.0025 | 0.00040 | 0.0479 |
| NOV 5,85 | OCT 8,85 | D 0.0008 | 0.00010 | 0.0331 |
| DEC 3,85 | NOV 5,85 | 0.0007 | 0.00008 | 0.0617 |
| DEC 31,85 | DEC 3,85 | D 0.0048 | 0.00027 | 0.0813 |

PART IV

CENTRAL REGION

CUMULATIVE PRECIPITATION CHEMISTRY LISTINGS

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : CAMPBELLFORD/CUMULATIVE PRECIP.

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PAGE : 1

| REMOVAL DATE | EXPOSURE DATE | SAMPLING START HR. | SAMPLING END HR. | SAMPLE TYPE 01-RAIN 02-SNOW 03-COMP/04-OTHER | GAUGE DEPTH(MM) | GAUGE TYPE 02,03-APIOS 09-AES | SAMPLE NUMBER | PROJECT CODE 02-APIOS 03-SPECIAL | SUBPROJECT CODE 01-MOE 03-AES | SAMPLER EFFICI- ENCY (%) | COMMENTS FIELD OFFICE |
|-----------------|------------------|--------------------------|------------------------|--|--------------------|--|------------------|---|--|-----------------------------------|--------------------------|
| JAN 29,85 | JAN 2,85 | 830 | 830 | 2 | 31.0 | 2 | 24410 | 2 | 1 | U 32 | F N |
| MAR 26,85 | JAN 29,85 | 830 | 800 | 3 | 50.2 | 9 | 24426 | 2 | 1 | I 219 | |
| APR 23,85 | MAR 26,85 | 800 | 1850 | 3 | 76.8 | 9 | 24432 | 2 | 1 | I 70 | |
| MAY 21,85 | APR 23,85 | 1850 | 1400 | 1 | 35.0 | 3 | 24439 | 2 | 1 | 82 | CD |
| JUN 19,85 | MAY 21,85 | 1400 | 1700 | 1 | 70.5 | 9 | 24448 | 2 | 1 | I 54 | CD |
| JUL 16,85 | JUN 19,85 | 1700 | 1800 | 1 | 87.0 | 3 | 24455 | 2 | 1 | *** | E |
| AUG 15,85 | JUL 16,85 | 1800 | 1845 | 1 | 25.0 | 3 | 24463 | 2 | 1 | 76 | |
| SEP 10,85 | AUG 15,85 | 1845 | 1800 | 1 | 165.0 | 3 | 24469 | 2 | 1 | 80 | BC |
| OCT 8,85 | SEP 10,85 | 1800 | 1850 | 1 | 20.0 | 3 | 24475 | 2 | 1 | 79 | C |
| NOV 5,85 | OCT 8,85 | 1850 | 1745 | 3 | 125.0 | 3 | 24482 | 2 | 1 | 83 | |
| DEC 3,85 | NOV 5,85 | 1745 | 1655 | 3 | 81.0 | 2 | 24488 | 2 | 1 | 99 | |
| DEC 31,85 | DEC 3,85 | 1655 | 1310 | 2 | 40.0 | 2 | 24495 | 2 | 1 | 54 | |

| REMOVAL DATE | EXPOSURE DATE | VOLUME ML | CONDUCT. UMHO/CM | PH LAB | TOTAL H+ GRAM MG/L | SULPHATE MG/L | NITRATE AS N MG/L | CALCIUM MG/L |
|-----------------|------------------|--------------|---------------------|-----------|--------------------------|------------------|-------------------------|-----------------|
| JAN 29,85 | JAN 2,85 | 330.0 | 40.7 | 4.10 | 0.1100 | 2.05 | 1.05 | 0.33 |
| MAR 26,85 | JAN 29,85 | 3581.0 | 35.4 | 4.21 | 0.0957 | 2.65 | 0.71 | 0.30 |
| APR 23,85 | MAR 26,85 | 1768.0 | 38.6 | 4.29 | 0.0912 | 4.60 | 0.82 | 0.74 |
| MAY 21,85 | APR 23,85 | 935.0 | 29.0 | 4.73 | 0.0678 | 4.35 | 0.84 | 1.06 |
| JUN 19,85 | MAY 21,85 | 1249.0 | 42.2 | 4.30 | 0.0931 | D 5.90 | 0.83 | 1.16 |
| JUL 16,85 | JUN 19,85 | ***** | ***** | ***** | ***** | ***** | ***** | ***** |
| AUG 15,85 | JUL 16,85 | 618.0 | 64.7 | 4.07 | 0.1370 | UG 9.00 | UG 1.13 | U 2.05 |
| SEP 10,85 | AUG 15,85 | 4300.0 | 25.1 | UG 4.80 | 0.0661 | 4.55 | 0.52 | D 1.02 |
| OCT 8,85 | SEP 10,85 | 515.0 | D 63.3 | 3.95 | 0.1470 | D 6.35 | B 1.19 | 0.90 |
| NOV 5,85 | OCT 8,85 | 3398.0 | 23.9 | 4.43 | 0.0633 | 2.40 | 0.37 | 0.24 |
| DEC 3,85 | NOV 5,85 | 2606.0 | 18.6 | 4.48 | 0.0573 | 1.55 | 0.27 | 0.17 |
| DEC 31,85 | DEC 3,85 | 711.0 | 33.0 | 4.15 | 0.0892 | 1.80 | 0.77 | 0.28 |

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : CAMPBELLFORD/CUMULATIVE PRECIP.

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PAGE : 2

| REMOVAL DATE | EXPOSURE DATE | CHLORIDE MG/L | KJELDAHL AS N MG/L | MAGNESIUM MG/L | POTASSIUM MG/L | SODIUM MG/L | AMMONIUM AS N MG/L | PHOSPHORUS MG/L |
|-----------------|------------------|------------------|--------------------------|-------------------|-------------------|----------------|--------------------------|--------------------|
| JAN 29,85 | JAN 2,85 | 0.46 | 0.80 | 0.040 | 0.030 | 0.310 | 0.155 | 0.022 |
| MAR 26,85 | JAN 29,85 | 0.29 | 0.32 | 0.040 | 0.025 | 0.170 | 0.270 | <T 0.004 |
| APR 23,85 | MAR 26,85 | 0.28 | UG 1.07 | 0.090 | 0.045 | 0.105 | 0.765 | 0.011 |
| MAY 21,85 | APR 23,85 | 0.23 | 1.32 | 0.170 | 0.050 | 0.075 | 0.905 | 0.040 |
| JUN 19,85 | MAY 21,85 | 0.21 | 1.35 | 0.105 | 0.125 | 0.065 | D 0.820 | D 0.047 |
| JUL 16,85 | JUN 19,85 | ***** | ***** | ***** | ***** | ***** | ***** | ***** |
| AUG 15,85 | JUL 16,85 | 0.36 | 0.89 | 0.185 | 0.050 | 0.050 | 0.810 | 0.008 |
| SEP 10,85 | AUG 15,85 | 0.14 | 1.03 | 0.065 | UG 0.235 | <T 0.005 | 0.800 | 0.085 |
| OCT 8,85 | SEP 10,85 | 0.26 | D 0.70 | 0.095 | 0.080 | 0.055 | D 0.595 | 0.008 |
| NOV 5,85 | OCT 8,85 | 0.12 | 0.29 | 0.025 | <W 0.005 | 0.035 | 0.260 | 0.006 |
| DEC 3,85 | NOV 5,85 | <T 0.05 | 0.16 | <T 0.015 | <T 0.005 | 0.030 | 0.095 | <T 0.005 |
| DEC 31,85 | DEC 3,85 | 0.29 | 0.28 | 0.015 | 0.050 | 0.120 | 0.230 | 0.008 |

| REMOVAL DATE | EXPOSURE DATE | MANGANESE MG/L | NICKEL MG/L | ZINC MG/L | IRON MG/L | LEAD MG/L | VANADIUM MG/L | ALUMINUM MG/L |
|-----------------|------------------|-------------------|----------------|--------------|--------------|--------------|------------------|------------------|
| JAN 29,85 | JAN 2,85 | ***** | ***** | ***** | ***** | ***** | ***** | ***** |
| MAR 26,85 | JAN 29,85 | 0.002 | 0.0005 | 0.005 | 0.035 | UG 0.031 | 0.0006 | 0.026 |
| APR 23,85 | MAR 26,85 | 0.008 | 0.0008 | 0.012 | UG 0.125 | 0.012 | < 0.0004 | 0.103 |
| MAY 21,85 | APR 23,85 | 0.021 | 0.0006 | 0.012 | 0.294 | 0.008 | < 0.0004 | UG 0.559 |
| JUN 19,85 | MAY 21,85 | 0.012 | 0.0004 | 0.006 | 0.118 | 0.008 | 0.0005 | 0.185 |
| JUL 16,85 | JUN 19,85 | ***** | ***** | ***** | ***** | ***** | ***** | ***** |
| AUG 15,85 | JUL 16,85 | D 0.008 | < 0.0002 | 0.010 | 0.087 | 0.009 | D 0.0006 | 0.097 |
| SEP 10,85 | AUG 15,85 | 0.007 | 0.0008 | 0.010 | 0.039 | 0.002 | < 0.0004 | 0.037 |
| OCT 8,85 | SEP 10,85 | 0.006 | 0.0006 | 0.008 | 0.058 | B 0.028 | < 0.0004 | 0.089 |
| NOV 5,85 | OCT 8,85 | 0.002 | 0.0002 | 0.003 | 0.015 | 0.006 | < 0.0004 | 0.016 |
| DEC 3,85 | NOV 5,85 | 0.001 | < 0.0002 | 0.004 | 0.012 | 0.004 | < 0.0004 | 0.019 |
| DEC 31,85 | DEC 3,85 | 0.001 | 0.0003 | 0.003 | UG 0.163 | 0.003 | < 0.0004 | 0.032 |

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : CAMPBELLFORD/CUMULATIVE PRECIP.

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PAGE : 3

| REMOVAL DATE | EXPOSURE DATE | COPPER MG/L | CADMIUM MG/L | FREE H+ MG/L |
|-----------------|------------------|----------------|-----------------|-----------------|
| JAN 29,85 | JAN 2,85 | ***** | ***** | 0.0794 |
| MAR 26,85 | JAN 29,85 | 0.0016 | 0.00030 | 0.0617 |
| APR 23,85 | MAR 26,85 | 0.0031 | 0.00040 | 0.0513 |
| MAY 21,85 | APR 23,85 | 0.0007 | 0.00041 | 0.0186 |
| JUN 19,85 | MAY 21,85 | 0.0011 | 0.00029 | 0.0501 |
| JUL 16,85 | JUN 19,85 | ***** | ***** | ***** |
| AUG 15,85 | JUL 16,85 | 0.0018 | 0.00012 | 0.0851 |
| SEP 10,85 | AUG 15,85 | 0.0003 | 0.00015 | LG 0.0158 |
| OCT 8,85 | SEP 10,85 | 0.0019 | 0.00009 | 0.1122 |
| NOV 5,85 | OCT 8,85 | 0.0004 | 0.00011 | 0.0372 |
| DEC 3,85 | NOV 5,85 | 0.0003 | 0.00005 | 0.0331 |
| DEC 31,85 | DEC 3,85 | 0.0005 | 0.00009 | 0.0708 |

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : COLDWATER/CUMULATIVE PRECIP.

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PAGE : 1

| REMOVAL DATE | EXPOSURE DATE | SAMPLING START HR. | END HR. | SAMPLE TYPE 01-RAIN 02-SNOW 03-COMP/04-OTHER | GAUGE DEPTH(MM) | GAUGE TYPE 02,03-APIOS 09-AES | SAMPLE NUMBER | PROJECT CODE 02-APIOS 03-SPECIAL | SUBPROJECT CODE 01-MOE 03-AES | SAMPLER EFFICI- ENCY (%) | COMMENTS FIELD OFFICE |
|-----------------|------------------|--------------------------|------------|--|--------------------|--|------------------|---|--|-----------------------------------|--------------------------|
| JAN 29,85 | DEC 31,84 | 1200 | 830 | 3 | 102.0 | 2 | 29404 | 2 | 1 | U 64 | G |
| FEB 26,85 | JAN 29,85 | 830 | 1130 | 3 | 110.0 | 2 | 29412 | 2 | 1 | 72 | |
| MAR 26,85 | FEB 26,85 | 1130 | 745 | 3 | 79.0 | 2 | 29417 | 2 | 1 | U 23 | FI |
| APR 23,85 | MAR 26,85 | 745 | 800 | 3 | 57.0 | 2 | 29426 | 2 | 1 | 161 | AC N |
| MAY 21,85 | APR 23,85 | 800 | 800 | 1 | 44.4 | 9 | 29437 | 2 | 1 | I 74 | |
| JUN 18,85 | MAY 21,85 | 800 | 800 | 1 | 56.6 | 9 | 29446 | 2 | 1 | U 71 | CFIJ |
| JUL 16,85 | JUN 18,85 | 800 | 800 | 1 | 57.0 | 3 | 29456 | 2 | 1 | 99 | C |
| AUG 13,85 | JUL 16,85 | 800 | 800 | 1 | 29.0 | 3 | 29465 | 2 | 1 | 128 | AQ N |
| SEP 10,85 | AUG 13,85 | 800 | 800 | 1 | 243.0 | 3 | 29473 | 2 | 1 | U 96 | AG |
| OCT 8,85 | SEP 10,85 | 800 | 800 | 1 | 48.0 | 3 | 29477 | 2 | 1 | 90 | |
| NOV 5,85 | OCT 8,85 | 800 | 800 | 1 | 98.0 | 2 | 29493 | 2 | 1 | 80 | |
| DEC 2,85 | NOV 5,85 | 800 | 800 | 3 | 110.0 | 2 | 29499 | 2 | 1 | 74 | A C |
| JAN 3,86 | DEC 2,85 | 800 | 1700 | 3 | 61.0 | 2 | 29505 | 2 | 1 | 62 | |

| REMOVAL DATE | EXPOSURE DATE | VOLUME ML | CONDUCT. UMHO/CM | PH LAB | TOTAL H+ GRAN MG/L | SULPHATE MG/L | NITRATE AS N MG/L | CALCIUM MG/L |
|-----------------|------------------|--------------|---------------------|-----------|--------------------------|------------------|-------------------------|-----------------|
| JAN 29,85 | DEC 31,84 | 2136.0 | 14.6 | 4.61 | 0.0445 | LG 0.80 | 0.29 | 0.07 |
| FEB 26,85 | JAN 29,85 | 2576.0 | 22.7 | 4.36 | 0.0666 | 1.30 | 0.43 | 0.08 |
| MAR 26,85 | FEB 26,85 | 615.0 | 15.3 | UG 4.80 | 0.0428 | 1.50 | 0.37 | 0.46 |
| APR 23,85 | MAR 26,85 | 2991.0 | 33.0 | 4.36 | 0.0750 | 3.90 | 0.70 | 0.64 |
| MAY 21,85 | APR 23,85 | 1080.0 | 27.5 | 4.61 | 0.0488 | 4.15 | 0.72 | 0.84 |
| JUN 18,85 | MAY 21,85 | 1307.0 | 29.6 | 4.35 | 0.0686 | 3.90 | 0.48 | 0.63 |
| JUL 16,85 | JUN 18,85 | 1850.0 | 20.2 | 4.40 | 0.0752 | 4.05 | 0.60 | 0.57 |
| AUG 13,85 | JUL 16,85 | 1214.0 | 32.1 | D 4.34 | 0.0732 | 4.00 | 0.51 | 0.59 |
| SEP 10,85 | AUG 13,85 | 7588.0 | 24.7 | 4.55 | 0.0584 | 3.40 | 0.37 | 0.15 |
| OCT 8,85 | SEP 10,85 | 1418.0 | 27.7 | 4.34 | 0.0787 | 2.55 | 0.40 | 0.57 |
| NOV 5,85 | OCT 8,85 | 2571.0 | 27.4 | 4.30 | 0.0739 | 2.50 | 0.39 | 0.13 |
| DEC 2,85 | NOV 5,85 | 2671.0 | LG 6.1 | UG 5.10 | LG 0.0277 | LG 0.35 | LG 0.09 | 0.07 |
| JAN 3,86 | DEC 2,85 | 1246.0 | D 31.3 | 4.27 | 0.0759 | 1.85 | 0.81 | 0.33 |

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : COLDWATER/CUMULATIVE PRECIP.

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PAGE : 2

| REMOVAL DATE | EXPOSURE DATE | CHLORIDE MG/L | KJELDAHL AS N MG/L | MAGNESIM MG/L | POTASSIM MG/L | SODIUM MG/L | AMMONIUM AS N MG/L | PHOSPHOR MG/L |
|-----------------|------------------|------------------|--------------------------|------------------|------------------|----------------|--------------------------|------------------|
| JAN 29,85 | DEC 31,84 | 0.15 | 0.13 | <T 0.010 | <T 0.005 | 0.070 | LG 0.060 | 0.018 |
| FEB 26,85 | JAN 29,85 | 0.18 | 0.17 | <T 0.010 | <T 0.015 | 0.070 | 0.090 | 0.007 |
| MAR 26,85 | FEB 26,85 | 0.23 | 0.26 | 0.045 | 0.005 | 0.115 | 0.160 | 0.013 |
| APR 23,85 | MAR 26,85 | 0.19 | 0.80 | 0.075 | 0.045 | 0.125 | 0.690 | 0.015 |
| MAY 21,85 | APR 23,85 | 0.16 | 1.02 | 0.160 | 0.050 | 0.065 | 0.885 | 0.013 |
| JUN 18,85 | MAY 21,85 | <T 0.04 | 0.62 | 0.110 | 0.055 | <T 0.020 | 0.450 | 0.014 |
| JUL 16,85 | JUN 18,85 | 0.16 | 0.61 | 0.100 | 0.065 | 0.040 | 0.485 | 0.008 |
| AUG 13,85 | JUL 16,85 | 0.12 | 0.48 | 0.110 | 0.050 | 0.010 | 0.535 | <T 0.005 |
| SEP 10,85 | AUG 13,85 | 0.11 | 1.02 | 0.030 | 0.105 | 0.040 | 0.750 | 0.117 |
| OCT 8,85 | SEP 10,85 | 0.10 | LG 0.24 | 0.055 | <T 0.005 | 0.030 | 0.215 | <T 0.003 |
| NOV 5,85 | OCT 8,85 | 0.12 | 0.30 | 0.025 | 0.020 | 0.045 | 0.305 | <T 0.003 |
| DEC 2,85 | NOV 5,85 | 0.08 | 0.22 | <W 0.005 | <W 0.005 | 0.025 | LG 0.070 | 0.030 |
| JAN 3,86 | DEC 2,85 | UG 0.60 | 0.52 | 0.040 | 0.110 | D 0.255 | 0.335 | 0.007 |

| REMOVAL DATE | EXPOSURE DATE | MANGANSE MG/L | NICKEL MG/L | ZINC MG/L | IRON MG/L | LEAD MG/L | VANADIUM MG/L | ALUMINUM MG/L |
|-----------------|------------------|------------------|----------------|--------------|--------------|--------------|------------------|------------------|
| JAN 29,85 | DEC 31,84 | < 0.001 | 0.0003 | 0.002 | 0.012 | 0.003 | < 0.0004 | 0.014 |
| FEB 26,85 | JAN 29,85 | 0.001 | < 0.0002 | 0.004 | 0.016 | 0.006 | < 0.0004 | 0.016 |
| MAR 26,85 | FEB 26,85 | 0.002 | 0.0003 | 0.010 | 0.037 | 0.008 | 0.0004 | 0.039 |
| APR 23,85 | MAR 26,85 | 0.006 | 0.0004 | 0.011 | 0.080 | 0.014 | < 0.0004 | 0.071 |
| MAY 21,85 | APR 23,85 | 0.006 | 0.0003 | 0.007 | 0.145 | 0.011 | < 0.0004 | 0.281 |
| JUN 18,85 | MAY 21,85 | 0.014 | < 0.0002 | 0.010 | 0.364 | 0.010 | 0.0004 | 0.257 |
| JUL 16,85 | JUN 18,85 | 0.008 | 0.0006 | 0.002 | 0.063 | 0.009 | 0.0005 | 0.067 |
| AUG 13,85 | JUL 16,85 | 0.004 | 0.0005 | 0.007 | 0.048 | 0.007 | < 0.0004 | 0.035 |
| SEP 10,85 | AUG 13,85 | 0.006 | < 0.0002 | 0.003 | 0.035 | 0.001 | < 0.0004 | 0.040 |
| OCT 8,85 | SEP 10,85 | 0.002 | < 0.0002 | 0.002 | 0.015 | 0.004 | < 0.0004 | 0.022 |
| NOV 5,85 | OCT 8,85 | 0.001 | 0.0003 | 0.002 | 0.018 | 0.003 | < 0.0004 | 0.020 |
| DEC 2,85 | NOV 5,85 | ***** | ***** | ***** | ***** | ***** | ***** | ***** |
| JAN 3,86 | DEC 2,85 | 0.004 | 0.0003 | D 0.014 | 0.043 | 0.006 | < 0.0004 | 0.048 |

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : COLDWATER/CUMULATIVE PRECIP.

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PAGE : 3

| REMOVAL DATE | EXPOSURE DATE | COPPER MG/L | CADMIUM MG/L | FREE H+ MG/L |
|-----------------|------------------|----------------|-----------------|-----------------|
| JAN 29,85 | DEC 31,84 | < 0.0003 | 0.00002 | 0.0245 |
| FEB 26,85 | JAN 29,85 | 0.0004 | 0.00006 | 0.0437 |
| MAR 26,85 | FEB 26,85 | 0.0026 | 0.00008 | LG 0.0158 |
| APR 23,85 | MAR 26,85 | 0.0017 | 0.00012 | 0.0437 |
| MAY 21,85 | APR 23,85 | 0.0015 | 0.00015 | 0.0245 |
| JUN 18,85 | MAY 21,85 | 0.0007 | U 0.00730 | 0.0447 |
| JUL 16,85 | JUN 18,85 | 0.0007 | 0.00010 | 0.0398 |
| AUG 13,85 | JUL 16,85 | 0.0006 | 0.00003 | D 0.0457 |
| SEP 10,85 | AUG 13,85 | 0.0018 | 0.00002 | 0.0282 |
| OCT 8,85 | SEP 10,85 | 0.0019 | 0.00012 | 0.0457 |
| NOV 5,85 | OCT 8,85 | D 0.0043 | 0.00005 | 0.0501 |
| DEC 2,85 | NOV 5,85 | ***** | ***** | LG 0.0079 |
| JAN 3,86 | DEC 2,85 | 0.0015 | 0.00019 | 0.0537 |

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : DORSET/CUMULATIVE PRECIP.

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PAGE : 1

| REMOVAL DATE | EXPOSURE DATE | SAMPLING START HR. | SAMPLING END HR. | SAMPLE TYPE 01-RAIN 02-SNOW 03-COMP/04-OTHER | GAUGE DEPTH(MM) | GAUGE TYPE 02,03-APIOS 09-AES | SAMPLE NUMBER | PROJECT CODE 02-APIOS 03-SPECIAL | SUBPROJECT CODE 01-MOE 03-AES | SAMPLER EFFICI- ENCY (%) | COMMENTS FIELD OFFICE |
|-----------------|------------------|--------------------------|------------------------|--|--------------------|--|------------------|---|--|-----------------------------------|--------------------------|
| JAN 29,85 | JAN 2,85 | 945 | 900 | 2 | 45.0 | 2 | 29405 | 2 | 1 | 62 | |
| FEB 26,85 | JAN 29,85 | 900 | 900 | 3 | 97.0 | 2 | 29409 | 2 | 1 | 75 | |
| MAR 26,85 | FEB 26,85 | 900 | 1115 | 3 | 84.0 | 2 | 29415 | 2 | 1 | 57 | |
| APR 23,85 | MAR 26,85 | 1115 | 855 | 3 | 127.0 | 2 | 29428 | 2 | 1 | 82 | Q |
| MAY 21,85 | APR 23,85 | 855 | 850 | 1 | 63.0 | 3 | 29433 | 2 | 1 | 98 | A H |
| JUN 18,85 | MAY 21,85 | 850 | 910 | 1 | 42.0 | 3 | 29443 | 2 | 1 | 94 | CQ H |
| JUL 16,85 | JUN 18,85 | 910 | 900 | 1 | 65.0 | 3 | 29450 | 2 | 1 | 94 | Q |
| AUG 13,85 | JUL 17,85 | 900 | 840 | 1 | 88.0 | 3 | 29461 | 2 | 1 | 92 | |
| SEP 10,85 | AUG 13,85 | 840 | 835 | 1 | 136.0 | 3 | 29469 | 2 | 1 | 92 | A |
| OCT 8,85 | SEP 10,85 | 835 | 1130 | 1 | 54.0 | 3 | 29479 | 2 | 1 | 112 | |
| NOV 5,85 | OCT 8,85 | 1130 | 840 | 1 | 92.0 | 3 | 29488 | 2 | 1 | 90 | |
| DEC 3,85 | NOV 5,85 | 840 | 1300 | 3 | 116.0 | 2 | 29496 | 2 | 1 | 79 | A |
| DEC 31,85 | DEC 3,85 | 1300 | 1200 | 3 | 61.0 | 2 | 29507 | 2 | 1 | 98 | |

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| REMOVAL DATE | EXPOSURE DATE | VOLUME ML | CONDUCT. UMHO/CM | PH LAB | TOTAL H+ GRAN MG/L | SULPHATE MG/L | NITRATE AS N MG/L | CALCIUM MG/L |
|-----------------|------------------|--------------|---------------------|-----------|--------------------------|------------------|-------------------------|-----------------|
| JAN 29,85 | JAN 2,85 | 919.0 | 24.0 | 4.34 | 0.0678 | 0.80 | 0.62 | 0.07 |
| FEB 26,85 | JAN 29,85 | 2393.0 | 28.2 | 4.24 | 0.0844 | 1.25 | 0.60 | <T 0.02 |
| MAR 26,85 | FEB 26,85 | 1567.0 | 31.3 | 4.36 | 0.0810 | 2.30 | 0.77 | D 0.41 |
| APR 23,85 | MAR 26,85 | 3420.0 | 25.3 | 4.40 | 0.0689 | 2.40 | 0.45 | 0.33 |
| MAY 21,85 | APR 23,85 | 2011.0 | 21.3 | UG 4.72 | 0.0743 | 3.15 | 0.48 | 0.39 |
| JUN 18,85 | MAY 21,85 | 1295.0 | 24.0 | U 4.82 | 0.0525 | 3.85 | 0.65 | U 1.34 |
| JUL 16,85 | JUN 18,85 | 1989.0 | 27.4 | 4.47 | 0.0648 | 3.50 | 0.50 | 0.49 |
| AUG 13,85 | JUL 17,85 | 2640.0 | 27.3 | 4.36 | 0.0682 | 3.05 | 0.40 | 0.34 |
| SEP 10,85 | AUG 13,85 | 4063.0 | 35.7 | 4.23 | 0.0943 | 3.50 | 0.42 | 0.17 |
| OCT 8,85 | SEP 10,85 | 1977.0 | 35.1 | 4.22 | 0.0967 | 3.05 | 0.51 | 0.28 |
| NOV 5,85 | OCT 8,85 | 2702.0 | 21.3 | 4.39 | 0.0631 | 1.90 | 0.28 | 0.12 |
| DEC 3,85 | NOV 5,85 | 3003.0 | ***** | ***** | ***** | ***** | ***** | ***** |
| DEC 31,85 | DEC 3,85 | 1959.0 | 24.9 | 4.28 | 0.0699 | 1.25 | 0.63 | 0.10 |

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : DORSET/CUMULATIVE PRECIP.

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PAGE : 2

| REMOVAL DATE | EXPOSURE DATE | CHLORIDE MG/L | KJELDAHL AS N MG/L | MAGNESIM MG/L | POTASSIM MG/L | SODIUM MG/L | AMMONIUM AS N MG/L | PHOSPHOR MG/L |
|-----------------|------------------|------------------|--------------------------|------------------|------------------|----------------|--------------------------|------------------|
| JAN 29,85 | JAN 2,85 | 0.12 | 0.14 | <W 0.005 | <T 0.005 | 0.035 | 0.090 | 0.009 |
| FEB 26,85 | JAN 29,85 | 0.15 | 0.15 | <T 0.005 | <T 0.005 | 0.040 | 0.100 | 0.007 |
| MAR 26,85 | FEB 26,85 | 0.20 | 0.43 | 0.050 | 0.005 | 0.075 | 0.345 | 0.012 |
| APR 23,85 | MAR 26,85 | 0.14 | 0.38 | 0.035 | 0.025 | 0.090 | 0.340 | <T 0.003 |
| MAY 21,85 | APR 23,85 | 0.22 | 0.95 | 0.065 | 0.045 | 0.055 | 0.595 | <T 0.006 |
| JUN 18,85 | MAY 21,85 | 0.20 | U 1.07 | U 0.250 | 0.095 | 0.045 | 0.485 | U 0.057 |
| JUL 16,85 | JUN 18,85 | 0.12 | 0.61 | 0.075 | 0.080 | 0.050 | 0.465 | 0.007 |
| AUG 13,85 | JUL 17,85 | 0.09 | 0.33 | 0.055 | 0.020 | 0.010 | 0.405 | <W 0.001 |
| SEP 10,85 | AUG 13,85 | 0.12 | 0.32 | 0.025 | <W 0.005 | <T 0.020 | 0.260 | <T 0.004 |
| OCT 8,85 | SEP 10,85 | 0.11 | 0.36 | 0.020 | <T 0.010 | 0.030 | 0.350 | <T 0.003 |
| NOV 5,85 | OCT 8,85 | 0.09 | 0.15 | 0.035 | <T 0.010 | 0.040 | 0.160 | <T 0.001 |
| DEC 3,85 | NOV 5,85 | ***** | ***** | ***** | ***** | ***** | ***** | ***** |
| DEC 31,85 | DEC 3,85 | 0.14 | 0.22 | <T 0.015 | <W 0.005 | 0.045 | 0.190 | <T 0.003 |

| REMOVAL DATE | EXPOSURE DATE | MANGANESE MG/L | NICKEL MG/L | ZINC MG/L | IRON MG/L | LEAD MG/L | VANADIUM MG/L | ALUMINUM MG/L |
|-----------------|------------------|-------------------|----------------|--------------|--------------|--------------|------------------|------------------|
| JAN 29,85 | JAN 2,85 | < 0.001 | 0.0008 | < 0.004 | 0.009 | 0.010 | < 0.0004 | 0.018 |
| FEB 26,85 | JAN 29,85 | < 0.001 | 0.0004 | 0.002 | 0.014 | 0.005 | < 0.0004 | 0.015 |
| MAR 26,85 | FEB 26,85 | 0.004 | 0.0004 | 0.007 | 0.091 | 0.011 | 0.0004 | 0.096 |
| APR 23,85 | MAR 26,85 | 0.003 | < 0.0002 | 0.003 | 0.036 | 0.011 | 0.0004 | 0.038 |
| MAY 21,85 | APR 23,85 | 0.022 | D 0.0011 | U 0.048 | 0.186 | 0.003 | 0.0005 | 0.173 |
| JUN 18,85 | MAY 21,85 | U 0.043 | U 0.0014 | U 0.014 | U 1.237 | U 0.015 | U 0.0017 | U 1.606 |
| JUL 16,85 | JUN 18,85 | 0.008 | 0.0005 | 0.003 | 0.090 | 0.005 | < 0.0004 | 0.103 |
| AUG 13,85 | JUL 17,85 | 0.003 | D 0.0005 | 0.006 | 0.038 | 0.003 | < 0.0004 | 0.033 |
| SEP 10,85 | AUG 13,85 | 0.001 | < 0.0002 | 0.002 | 0.022 | 0.001 | < 0.0004 | 0.026 |
| OCT 8,85 | SEP 10,85 | D 0.002 | < 0.0002 | 0.005 | 0.017 | 0.007 | < 0.0004 | 0.024 |
| NOV 5,85 | OCT 8,85 | < 0.001 | 0.0003 | 0.001 | 0.009 | 0.002 | < 0.0004 | 0.016 |
| DEC 3,85 | NOV 5,85 | ***** | ***** | ***** | ***** | ***** | ***** | ***** |
| DEC 31,85 | DEC 3,85 | 0.001 | 0.0007 | 0.008 | 0.021 | 0.003 | < 0.0004 | 0.016 |

ONTARIO MINISTRY OF THE ENVIRONMENT
 CUMULATIVE SAMPLING ANALYSIS RESULTS
 APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : DORSET/CUMULATIVE PRECIP.

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PAGE : 3

| REMOVAL DATE | EXPOSURE DATE | COPPER MG/L | CADMIUM MG/L | FREE H+ MG/L |
|-----------------|------------------|----------------|-----------------|-----------------|
| JAN 29,85 | JAN 2,85 | 0.0008 | 0.00002 | 0.0457 |
| FEB 26,85 | JAN 29,85 | 0.0004 | 0.00008 | 0.0575 |
| MAR 26,85 | FEB 26,85 | 0.0009 | 0.00011 | 0.0437 |
| APR 23,85 | MAR 26,85 | 0.0012 | 0.00006 | 0.0398 |
| MAY 21,85 | APR 23,85 | < 0.0003 | UG 0.00017 | LG 0.0191 |
| JUN 18,85 | MAY 21,85 | 0.0030 | U 0.00015 | U 0.0151 |
| JUL 16,85 | JUN 18,85 | 0.0007 | 0.00004 | 0.0339 |
| AUG 13,85 | JUL 17,85 | 0.0010 | < 0.00002 | 0.0437 |
| SEP 10,85 | AUG 13,85 | < 0.0002 | < 0.00002 | 0.0589 |
| OCT 8,85 | SEP 10,85 | 0.0011 | 0.00009 | 0.0603 |
| NOV 5,85 | OCT 8,85 | 0.0002 | 0.00002 | 0.0407 |
| DEC 3,85 | NOV 5,85 | ***** | ***** | ***** |
| DEC 31,85 | DEC 3,85 | 0.0006 | 0.00004 | 0.0525 |

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : UXBRIDGE/CUMULATIVE PRECIP.

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PAGE : 1

| REMOVAL DATE | EXPOSURE DATE | SAMPLING START HR. | END HR. | SAMPLE TYPE 01-RAIN 02-SNOW 03-COMP/04-OTHER | GAUGE DEPTH(MM) | GAUGE TYPE 02,03-APIOS 09-AES | SAMPLE NUMBER | PROJECT CODE 02-APIOS 03-SPECIAL | SUBPROJECT CODE 01-MOE 03-AES | SAMPLER EFFICI- ENCY (%) | COMMENTS FIELD OFFICE |
|-----------------|------------------|--------------------------|------------|--|--------------------|--|------------------|---|--|-----------------------------------|-----------------------------|
| JAN 29,85 | JAN 2,85 | 1130 | 1023 | 2 | 29.0 | 3 | 40242 | 2 | 1 | U 5 | G |
| FEB 27,85 | JAN 29,85 | 1023 | 730 | 3 | 109.0 | 2 | 40245 | 2 | 1 | U 24 | CG |
| APR 24,85 | FEB 27,85 | 730 | 1500 | 1 | 44.0 | 9 | 40251 | 2 | 1 | U 122 | F |
| MAY 23,85 | APR 24,85 | 1500 | 1220 | 1 | 1.5 | 2 | 40254 | 2 | 1 | *** | N |
| JUN 18,85 | MAY 23,85 | 1220 | 730 | 1 | 65.0 | 3 | 40259 | 2 | 1 | U 30 | ACDG |
| JUL 16,85 | JUN 18,85 | 730 | 1000 | 1 | 170.0 | 3 | 40263 | 2 | 1 | 76 | HC |
| AUG 16,85 | JUL 16,85 | 1000 | 1424 | 1 | 20.0 | 3 | 40280 | 2 | 1 | 153 | N |
| SEP 10,85 | AUG 16,85 | 1424 | 730 | 1 | 110.0 | 3 | 40286 | 2 | 1 | U 35 | G |
| OCT 8,85 | SEP 10,85 | 730 | 954 | 1 | 50.0 | 3 | 40292 | 2 | 1 | 81 | C |
| NOV 12,85 | OCT 25,85 | 1020 | 1305 | 3 | 120.0 | 3 | 40304 | 2 | 1 | 80 | |
| JAN 7,86 | DEC 5,85 | **** | 1125 | 3 | 121.0 | 2 | 40318 | 2 | 1 | 26 | N |

| REMOVAL DATE | EXPOSURE DATE | VOLUME ML | CONDUCT. UMHO/CM | PH LAB | TOTAL H+ GRAN MG/L | SULPHATE MG/L | NITRATE AS N MG/L | CALCIUM MG/L |
|-----------------|------------------|--------------|---------------------|-----------|--------------------------|------------------|-------------------------|-----------------|
| JAN 29,85 | JAN 2,85 | 55.0 | ***** | 4.33 | 0.0821 | ***** | ***** | ***** |
| FEB 27,85 | JAN 29,85 | 866.0 | LG 9.2 | 4.71 | 0.0418 | LG 0.55 | LG 0.16 | <W 0.01 |
| APR 24,85 | FEB 27,85 | 1754.0 | 19.1 | 4.52 | 0.0505 | 2.05 | 0.38 | 0.54 |
| MAY 23,85 | APR 24,85 | 870.0 | 20.2 | UG 4.92 | LG 0.0334 | 3.50 | 0.58 | 0.86 |
| JUN 18,85 | MAY 23,85 | 651.0 | 25.9 | U 6.92 | LG 0.0155 | 4.20 | 0.62 | U 2.11 |
| JUL 16,85 | JUN 18,85 | 4214.0 | 23.1 | 4.47 | 0.0586 | 2.55 | 0.35 | 0.26 |
| AUG 16,85 | JUL 16,85 | 998.0 | 41.8 | 4.12 | 0.0990 | 4.95 | 0.63 | 0.61 |
| SEP 10,85 | AUG 16,85 | 1268.0 | 37.4 | 4.16 | 0.0935 | 3.45 | 0.58 | 0.11 |
| OCT 8,85 | SEP 10,85 | 1324.0 | 28.6 | 4.21 | 0.0888 | 3.20 | 0.47 | ***** |
| NOV 12,85 | OCT 25,85 | 3155.0 | 24.5 | 4.40 | 0.0686 | 2.15 | 0.41 | 0.20 |
| JAN 7,86 | DEC 5,85 | 1033.0 | 37.3 | 4.16 | 0.0954 | 2.30 | 0.92 | 0.47 |

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : UXBRIDGE/CUMULATIVE PRECIP.

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PAGE : 2

| REMOVAL DATE | EXPOSURE DATE | CHLORIDE MG/L | KJELDAHL AS N MG/L | MAGNESIUM MG/L | POTASSIUM MG/L | SODIUM MG/L | AMMONIUM AS N MG/L | PHOSPHOR MG/L |
|-----------------|------------------|------------------|--------------------------|-------------------|-------------------|----------------|--------------------------|------------------|
| JAN 29,85 | JAN 2,85 | ***** | ***** | ***** | ***** | ***** | <W 0.005 | ***** |
| FEB 27,85 | JAN 29,85 | 0.09 | LG 0.08 | <W 0.005 | 0.035 | 0.045 | LG 0.050 | 0.007 |
| APR 24,85 | FEB 27,85 | 0.11 | 0.38 | 0.040 | 0.025 | 0.070 | 0.160 | 0.015 |
| MAY 23,85 | APR 24,85 | 0.12 | 0.88 | 0.140 | 0.030 | 0.060 | 0.715 | 0.013 |
| JUN 18,85 | MAY 23,85 | 0.18 | 0.80 | 0.125 | 0.080 | 0.075 | 0.505 | 0.014 |
| JUL 16,85 | JUN 18,85 | 0.09 | 0.41 | 0.040 | 0.045 | 0.060 | 0.340 | <W 0.001 |
| AUG 16,85 | JUL 16,85 | 0.15 | 0.64 | 0.085 | 0.050 | 0.025 | 0.540 | 0.009 |
| SEP 10,85 | AUG 16,85 | 0.09 | 0.41 | 0.030 | 0.030 | 0.025 | 0.365 | <T 0.002 |
| OCT 8,85 | SEP 10,85 | 0.15 | LG 0.21 | ***** | 0.030 | 0.045 | 0.210 | <T 0.003 |
| NOV 12,85 | OCT 25,85 | 0.10 | 0.59 | 0.040 | 0.070 | 0.040 | 0.275 | 0.029 |
| JAN 7,86 | DEC 5,85 | UG 0.59 | 0.41 | 0.045 | 0.040 | 0.245 | 0.310 | <T 0.005 |

| REMOVAL DATE | EXPOSURE DATE | MANGANESE MG/L | NICKEL MG/L | ZINC MG/L | IRON MG/L | LEAD MG/L | VANADIUM MG/L | ALUMINUM MG/L |
|-----------------|------------------|-------------------|----------------|--------------|--------------|--------------|------------------|------------------|
| JAN 29,85 | JAN 2,85 | ***** | ***** | ***** | ***** | ***** | ***** | ***** |
| FEB 27,85 | JAN 29,85 | < 0.001 | < 0.0002 | 0.004 | 0.013 | 0.004 | < 0.0004 | 0.003 |
| APR 24,85 | FEB 27,85 | 0.009 | < 0.0002 | 0.006 | UG 0.130 | 0.004 | < 0.0004 | 0.116 |
| MAY 23,85 | APR 24,85 | 0.010 | < 0.0002 | 0.008 | 0.139 | 0.009 | < 0.0004 | 0.121 |
| JUN 18,85 | MAY 23,85 | 0.011 | 0.0006 | 0.008 | 0.089 | 0.017 | 0.0005 | 0.092 |
| JUL 16,85 | JUN 18,85 | 0.003 | < 0.0002 | 0.003 | 0.024 | 0.003 | < 0.0004 | 0.017 |
| AUG 16,85 | JUL 16,85 | 0.003 | 0.0012 | 0.011 | 0.074 | 0.009 | < 0.0004 | 0.051 |
| SEP 10,85 | AUG 16,85 | 0.002 | < 0.0002 | 0.004 | 0.013 | D 0.008 | < 0.0004 | 0.027 |
| OCT 8,85 | SEP 10,85 | 0.003 | 0.0005 | 0.005 | 0.036 | 0.005 | < 0.0004 | 0.040 |
| NOV 12,85 | OCT 25,85 | ***** | ***** | ***** | ***** | ***** | ***** | ***** |
| JAN 7,86 | DEC 5,85 | 0.004 | 0.0011 | 0.014 | 0.053 | 0.006 | < 0.0004 | 0.042 |

ONTARIO MINISTRY OF THE ENVIRONMENT
 CUMULATIVE SAMPLING ANALYSIS RESULTS
 APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : UXBRIDGE/CUMULATIVE PRECIP.

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PAGE : 3

| REMOVAL DATE | EXPOSURE DATE | COPPER MG/L | CADMIUM MG/L | FREE H+ MG/L |
|-----------------|------------------|----------------|-----------------|-----------------|
| JAN 29,85 | JAN 2,85 | ***** | ***** | 0.0468 |
| FEB 27,85 | JAN 29,85 | 0.0010 | 0.00003 | 0.0195 |
| APR 24,85 | FEB 27,85 | 0.0013 | 0.00031 | 0.0302 |
| MAY 23,85 | APR 24,85 | 0.0012 | 0.00020 | LG 0.0120 |
| JUN 18,85 | MAY 23,85 | 0.0013 | 0.00012 | U 0.0001 |
| JUL 16,85 | JUN 18,85 | 0.0004 | 0.00006 | 0.0339 |
| AUG 16,85 | JUL 16,85 | 0.0024 | 0.00009 | 0.0759 |
| SEP 10,85 | AUG 16,85 | 0.0004 | 0.00007 | 0.0692 |
| OCT 8,85 | SEP 10,85 | 0.0009 | 0.00008 | 0.0617 |
| NOV 12,85 | OCT 25,85 | ***** | ***** | 0.0398 |
| JAN 7,86 | DEC 5,85 | 0.0012 | 0.00026 | 0.0692 |

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : WILBERFORCE/CUMULATIVE PRECIP.

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PAGE : 1

| REMOVAL DATE | EXPOSURE DATE | SAMPLING START HR. | SAMPLING END HR. | SAMPLE TYPE 01-RAIN 02-SNOW 03-COMP/04-OTHER | GAUGE DEPTH(MM) | GAUGE TYPE 02,03-APIOS 09-AES | SAMPLE NUMBER | PROJECT CODE 02-APIOS 03-SPECIAL | SUBPROJECT CODE 01-MOE 03-AES | SAMPLER EFFICI- ENCY (%) | COMMENTS FIELD OFFICE |
|-----------------|------------------|--------------------------|------------------------|--|--------------------|--|------------------|---|--|-----------------------------------|--------------------------|
| JAN 29,85 | JAN 2,85 | 1230 | 1430 | 2 | 36.0 | 2 | 29402 | 2 | 1 | 75 | |
| FEB 26,85 | JAN 29,85 | 1430 | 1345 | 3 | 114.0 | 2 | 29411 | 2 | 1 | 65 | |
| MAR 26,85 | FEB 26,85 | 1345 | 1400 | 3 | 81.0 | 2 | 29418 | 2 | 1 | 62 | |
| APR 23,85 | MAR 26,85 | 1400 | 1220 | 3 | 111.0 | 2 | 29427 | 2 | 1 | 74 | |
| MAY 21,85 | APR 23,85 | 1220 | 1415 | 1 | 70.0 | 2 | 29436 | 2 | 1 | 69 | AQ |
| JUN 18,85 | MAY 21,85 | 1415 | 1700 | 1 | 77.0 | 3 | 29442 | 2 | 1 | 87 | C |
| JUL 16,85 | JUN 18,85 | 1700 | 1210 | 1 | 107.0 | 3 | 29454 | 2 | 1 | 94 | |
| AUG 13,85 | JUL 16,85 | 1210 | 1050 | 1 | 36.0 | 3 | 29463 | 2 | 1 | 94 | A |
| SEP 10,85 | AUG 13,85 | 1050 | 1130 | 1 | 160.0 | 3 | 29472 | 2 | 1 | 90 | A |
| OCT 8,85 | SEP 10,85 | 1130 | 1000 | 1 | 62.0 | 3 | 29482 | 2 | 1 | 93 | |
| NOV 5,85 | OCT 8,85 | 1000 | 1130 | 1 | 78.0 | 3 | 29487 | 2 | 1 | 86 | |
| DEC 3,85 | NOV 5,85 | 1130 | 1610 | 3 | 105.0 | 2 | 29500 | 2 | 1 | 82 | |
| JAN 3,86 | DEC 3,85 | 1610 | 1440 | 2 | 49.0 | 2 | 29506 | 2 | 1 | U 16 | FI |

| REMOVAL DATE | EXPOSURE DATE | VOLUME ML | CONDUCT. UMHO/CM | PH LAB | TOTAL H+ GRAN MG/L | SULPHATE MG/L | NITRATE AS N MG/L | CALCIUM MG/L |
|-----------------|------------------|--------------|---------------------|-----------|--------------------------|------------------|-------------------------|-----------------|
| JAN 29,85 | JAN 2,85 | 883.0 | 33.1 | 4.20 | 0.0862 | 1.00 | 0.86 | 0.12 |
| FEB 26,85 | JAN 29,85 | 2433.0 | 28.6 | 4.27 | 0.0839 | 1.50 | 0.57 | <T 0.03 |
| MAR 26,85 | FEB 26,85 | 1650.0 | 23.0 | 4.48 | 0.0693 | 1.80 | 0.51 | 0.29 |
| APR 23,85 | MAR 26,85 | 2692.0 | 21.7 | 4.47 | 0.0678 | 2.10 | 0.39 | 0.27 |
| MAY 21,85 | APR 23,85 | 1577.0 | 28.7 | 4.45 | 0.0770 | 3.85 | 0.61 | 0.42 |
| JUN 18,85 | MAY 21,85 | 2179.0 | 31.6 | 4.33 | 0.0826 | 4.20 | 0.54 | U 0.73 |
| JUL 16,85 | JUN 18,85 | 3274.0 | 28.4 | 4.28 | 0.0931 | 4.20 | 0.61 | 0.39 |
| AUG 13,85 | JUL 16,85 | 1099.0 | 35.0 | 4.24 | 0.0918 | 3.65 | 0.61 | 0.39 |
| SEP 10,85 | AUG 13,85 | 4695.0 | 37.9 | 4.21 | 0.0972 | 3.65 | 0.39 | 0.13 |
| OCT 8,85 | SEP 10,85 | 1880.0 | 36.6 | 4.19 | 0.0978 | 3.05 | 0.46 | 0.12 |
| NOV 5,85 | OCT 8,85 | 2198.0 | 24.2 | 4.34 | 0.0679 | 2.15 | 0.32 | 0.13 |
| DEC 3,85 | NOV 5,85 | 2797.0 | 21.3 | 4.40 | 0.0644 | 1.50 | 0.36 | 0.09 |
| JAN 3,86 | DEC 3,85 | 261.0 | 30.9 | 4.22 | 0.0830 | 1.95 | 0.74 | 0.28 |

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : WILBERFORCE/CUMULATIVE PRECIP.

#18

PAGE : 2

| REMOVAL DATE | EXPOSURE DATE | CHLORIDE MG/L | KJELDAHL AS N MG/L | MAGNESIM MG/L | POTASSIM MG/L | SODIUM MG/L | AMMONIUM AS N MG/L | PHOSPHOR MG/L |
|-----------------|------------------|------------------|--------------------------|------------------|------------------|----------------|--------------------------|------------------|
| JAN 29,85 | JAN 2,85 | 0.30 | 0.18 | <T 0.100 | <T 0.020 | 0.145 | 0.100 | D 0.026 |
| FEB 26,85 | JAN 29,85 | 0.27 | 0.23 | <T 0.005 | 0.040 | 0.110 | 0.130 | 0.012 |
| MAR 26,85 | FEB 26,85 | 0.17 | 0.38 | 0.030 | 0.010 | 0.055 | 0.215 | 0.009 |
| APR 23,85 | MAR 26,85 | 0.15 | 0.37 | 0.030 | 0.025 | 0.085 | 0.250 | 0.007 |
| MAY 21,85 | APR 23,85 | 0.11 | 0.94 | 0.070 | 0.040 | 0.020 | 0.740 | 0.011 |
| JUN 18,85 | MAY 21,85 | <T 0.06 | 0.72 | U 0.130 | 0.045 | <T 0.015 | 0.500 | 0.033 |
| JUL 16,85 | JUN 18,85 | 0.14 | 0.60 | 0.060 | 0.055 | 0.055 | 0.470 | 0.005 |
| AUG 13,85 | JUL 16,85 | 0.12 | 0.17 | 0.060 | 0.060 | 0.010 | 0.475 | <W 0.001 |
| SEP 10,85 | AUG 13,85 | 0.09 | 0.30 | 0.015 | <W 0.005 | 0.020 | 0.260 | <T 0.002 |
| OCT 8,85 | SEP 10,85 | 0.11 | 0.25 | <T 0.015 | <W 0.005 | 0.035 | 0.225 | <T 0.003 |
| NOV 5,85 | OCT 8,85 | 0.10 | 0.19 | 0.020 | <T 0.010 | 0.050 | 0.205 | <T 0.001 |
| DEC 3,85 | NOV 5,85 | 0.10 | 0.17 | <T 0.005 | <W 0.005 | 0.035 | 0.145 | D 0.008 |
| JAN 3,86 | DEC 3,85 | 0.29 | 0.33 | 0.025 | <T 0.005 | 0.145 | 0.240 | 0.014 |

| REMOVAL DATE | EXPOSURE DATE | MANGANESE MG/L | NICKEL MG/L | ZINC MG/L | IRON MG/L | LEAD MG/L | VANADIUM MG/L | ALUMINUM MG/L |
|-----------------|------------------|-------------------|----------------|--------------|--------------|--------------|------------------|------------------|
| JAN 29,85 | JAN 2,85 | 0.001 | 0.0004 | < 0.004 | 0.018 | 0.012 | < 0.0004 | 0.028 |
| FEB 26,85 | JAN 29,85 | 0.001 | 0.0004 | 0.003 | 0.011 | 0.005 | < 0.0004 | 0.019 |
| MAR 26,85 | FEB 26,85 | 0.003 | 0.0007 | 0.004 | 0.036 | 0.009 | 0.0004 | 0.067 |
| APR 23,85 | MAR 26,85 | 0.002 | 0.0003 | 0.002 | 0.035 | 0.010 | < 0.0004 | 0.104 |
| MAY 21,85 | APR 23,85 | 0.004 | 0.0006 | 0.008 | 0.055 | 0.007 | < 0.0004 | 0.060 |
| JUN 18,85 | MAY 21,85 | 0.021 | < 0.0002 | 0.007 | U 0.515 | 0.012 | U 0.0008 | U 0.573 |
| JUL 16,85 | JUN 18,85 | 0.006 | 0.0007 | 0.003 | 0.079 | 0.004 | D 0.0005 | 0.115 |
| AUG 13,85 | JUL 16,85 | 0.005 | < 0.0002 | 0.007 | 0.047 | D 0.009 | < 0.0004 | D 0.100 |
| SEP 10,85 | AUG 13,85 | 0.001 | < 0.0002 | 0.003 | 0.019 | 0.001 | < 0.0004 | 0.029 |
| OCT 8,85 | SEP 10,85 | 0.001 | < 0.0002 | 0.004 | 0.017 | 0.005 | < 0.0004 | 0.029 |
| NOV 5,85 | OCT 8,85 | < 0.001 | 0.0006 | 0.002 | 0.011 | 0.002 | < 0.0004 | 0.023 |
| DEC 3,85 | NOV 5,85 | < 0.001 | 0.0002 | 0.002 | 0.009 | 0.001 | < 0.0004 | 0.012 |
| JAN 3,86 | DEC 3,85 | 0.003 | 0.0005 | 0.008 | 0.045 | 0.007 | < 0.0004 | 0.061 |

ONTARIO MINISTRY OF THE ENVIRONMENT
 CUMULATIVE SAMPLING ANALYSIS RESULTS
 APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : WILBERFORCE/CUMULATIVE PRECIP.

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PAGE : 3

| REMOVAL DATE | EXPOSURE DATE | COPPER MG/L | CADMIUM MG/L | FREE H+ MG/L |
|-----------------|------------------|----------------|-----------------|-----------------|
| JAN 29,85 | JAN 2,85 | < 0.0004 | 0.00012 | 0.0631 |
| FEB 26,85 | JAN 29,85 | 0.0006 | 0.00006 | 0.0537 |
| MAR 26,85 | FEB 26,85 | 0.0014 | 0.00009 | 0.0331 |
| APR 23,85 | MAR 26,85 | 0.0023 | 0.00013 | 0.0339 |
| MAY 21,85 | APR 23,85 | 0.0011 | UG 0.00012 | 0.0355 |
| JUN 18,85 | MAY 21,85 | 0.0032 | < 0.00002 | 0.0468 |
| JUL 16,85 | JUN 18,85 | 0.0008 | 0.00006 | 0.0525 |
| AUG 13,85 | JUL 16,85 | 0.0037 | < 0.00002 | 0.0575 |
| SEP 10,85 | AUG 13,85 | 0.0010 | < 0.00002 | 0.0617 |
| OCT 8,85 | SEP 10,85 | 0.0015 | 0.00006 | 0.0646 |
| NOV 5,85 | OCT 8,85 | D 0.0021 | 0.00003 | 0.0457 |
| DEC 3,85 | NOV 5,85 | 0.0006 | 0.00006 | 0.0398 |
| JAN 3,86 | DEC 3,85 | 0.0013 | 0.00010 | 0.0603 |

PART V

SOUTHEASTERN REGION

CUMULATIVE PRECIPITATION CHEMISTRY LISTINGS

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : CLOYNE/CUMULATIVE PRECIP.

#14

PAGE : 1

| REMOVAL DATE | EXPOSURE DATE | SAMPLING START HR. | END HR. | SAMPLE TYPE 01-RAIN 02-SNOW 03-COMP/04-OTHER | GAUGE DEPTH(MM) | GAUGE TYPE 02,03-APIOS 09-AES | SAMPLE NUMBER | PROJECT CODE 02-APIOS 03-SPECIAL | SUBPROJECT CODE 01-MOE 03-AES | SAMPLER EFFICI- ENCY (%) | COMMENTS FIELD OFFICE |
|-----------------|------------------|--------------------------|------------|--|--------------------|--|------------------|---|--|-----------------------------------|--------------------------|
| JAN 28,85 | JAN 2,85 | 800 | 1030 | 2 | 22.0 | 2 | 24415 | 2 | 1 | 49 | N |
| FEB 28,85 | JAN 28,85 | 1030 | 1030 | 3 | 91.0 | 2 | 24421 | 2 | 1 | 79 | D |
| MAR 28,85 | FEB 28,85 | 1030 | 945 | 3 | 78.0 | 2 | 24431 | 2 | 1 | 78 | |
| APR 23,85 | MAR 28,85 | 945 | 1300 | 3 | 72.0 | 9 | 24437 | 2 | 1 | I 102 | CB |
| MAY 21,85 | APR 23,85 | 1300 | 945 | 1 | 55.0 | 3 | 24444 | 2 | 1 | 73 | BC |
| JUN 18,85 | MAY 21,85 | 945 | 1010 | 1 | 55.0 | 3 | 24453 | 2 | 1 | 77 | D |
| JUL 16,85 | JUN 18,85 | 1010 | 1800 | 1 | 80.0 | 3 | 24460 | 2 | 1 | 51 | |
| AUG 13,85 | JUL 16,85 | 1800 | 900 | 1 | 40.0 | 3 | 24468 | 2 | 1 | 76 | |
| SEP 10,85 | AUG 13,85 | 900 | 1715 | 1 | 150.0 | 3 | 24474 | 2 | 1 | 92 | |
| OCT 8,85 | SEP 10,85 | 1715 | 700 | 1 | 45.0 | 3 | 24481 | 2 | 1 | 100 | |
| NOV 5,85 | OCT 8,85 | 700 | 1600 | 3 | 95.0 | 3 | 24487 | 2 | 1 | 87 | |
| DEC 3,85 | NOV 5,85 | 1600 | 730 | 3 | 102.4 | 9 | 24493 | 2 | 1 | I 68 | N |
| DEC 31,85 | DEC 3,85 | 730 | 755 | 2 | 51.0 | 2 | 24500 | 2 | 1 | 72 | |

| REMOVAL DATE | EXPOSURE DATE | VOLUME ML | CONDUCT. UMHO/CM | PH LAB | TOTAL H+ GRAM MG/L | SULPHATE MG/L | NITRATE AS N MG/L | CALCIUM MG/L |
|-----------------|------------------|--------------|---------------------|-----------|--------------------------|------------------|-------------------------|-----------------|
| JAN 28,85 | JAN 2,85 | 356.0 | 45.5 | 4.04 | 0.1180 | 1.35 | 1.26 | 0.14 |
| FEB 28,85 | JAN 28,85 | 2340.0 | 34.1 | 4.18 | 0.0954 | 1.90 | 0.63 | 0.04 |
| MAR 28,85 | FEB 28,85 | 1985.0 | 23.8 | 4.38 | 0.0711 | 1.90 | 0.47 | 0.22 |
| APR 23,85 | MAR 28,85 | 2400.0 | 29.5 | 4.34 | 0.0739 | 2.90 | 0.48 | 0.33 |
| MAY 21,85 | APR 23,85 | 1310.0 | 40.7 | 4.17 | 0.0934 | 4.70 | 0.75 | 0.54 |
| JUN 18,85 | MAY 21,85 | 1390.0 | 37.4 | 4.19 | 0.0933 | 4.00 | 0.45 | 0.10 |
| JUL 16,85 | JUN 18,85 | 1334.0 | 43.8 | 4.08 | 0.1140 | 4.30 | 0.49 | 0.19 |
| AUG 13,85 | JUL 16,85 | 989.0 | 50.6 | 4.13 | 0.1170 | 5.70 | 0.90 | 0.61 |
| SEP 10,85 | AUG 13,85 | 4519.0 | 28.6 | 4.29 | 0.0814 | 2.90 | 0.30 | 0.11 |
| OCT 8,85 | SEP 10,85 | 1468.0 | 20.5 | 4.74 | 0.0423 | 2.90 | 0.54 | 1.07 |
| NOV 5,85 | OCT 8,85 | 2714.0 | 20.8 | 4.43 | 0.0595 | 1.85 | 0.28 | 0.07 |
| DEC 3,85 | NOV 5,85 | 2266.0 | 18.3 | 4.52 | 0.0545 | 1.35 | 0.34 | 0.06 |
| DEC 31,85 | DEC 3,85 | 1193.0 | 32.9 | 4.16 | 0.0920 | 1.60 | 0.79 | 0.22 |

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : CLOYNE/CUMULATIVE PRECIP.

#14

PAGE : 2

| REMOVAL DATE | EXPOSURE DATE | CHLORIDE MG/L | KJELDAHL AS N MG/L | MAGNESIM MG/L | POTASSIM MG/L | SODIUM MG/L | AMMONIUM AS N MG/L | PHOSPHOR MG/L |
|-----------------|------------------|------------------|--------------------------|------------------|------------------|----------------|--------------------------|------------------|
| JAN 28,85 | JAN 2,85 | 0.29 | 0.42 | 0.035 | 0.030 | 0.165 | 0.160 | 0.026 |
| FEB 28,85 | JAN 28,85 | 0.21 | 0.18 | <T 0.015 | 0.025 | 0.090 | 0.110 | <T 0.005 |
| MAR 28,85 | FEB 28,85 | 0.12 | 0.30 | 0.030 | <T 0.005 | 0.045 | 0.230 | <T 0.001 |
| APR 23,85 | MAR 28,85 | 0.15 | 0.41 | 0.050 | 0.030 | 0.075 | 0.310 | <T 0.003 |
| MAY 21,85 | APR 23,85 | 0.07 | 0.81 | 0.085 | 0.040 | 0.025 | 0.700 | 0.020 |
| JUN 18,85 | MAY 21,85 | 0.08 | 0.61 | D 0.020 | 0.055 | <T 0.015 | 0.470 | 0.008 |
| JUL 16,85 | JUN 18,85 | 0.09 | 0.36 | 0.035 | 0.055 | 0.010 | 0.350 | <T 0.002 |
| AUG 13,85 | JUL 16,85 | 0.18 | 0.85 | 0.085 | D 0.040 | 0.020 | 0.755 | 0.013 |
| SEP 10,85 | AUG 13,85 | <T 0.04 | LG 0.22 | 0.015 | <T 0.005 | <T 0.015 | 0.230 | <T 0.005 |
| OCT 8,85 | SEP 10,85 | 0.09 | 0.28 | 0.045 | 0.040 | 0.025 | 0.235 | <T 0.005 |
| NOV 5,85 | OCT 8,85 | 0.09 | 0.21 | <T 0.005 | <W 0.005 | 0.030 | 0.165 | <T 0.001 |
| DEC 3,85 | NOV 5,85 | 0.10 | 0.18 | <T 0.010 | <T 0.010 | 0.055 | 0.130 | <T 0.002 |
| DEC 31,85 | DEC 3,85 | 0.22 | 0.26 | 0.015 | 0.035 | 0.115 | 0.195 | 0.006 |

| REMOVAL DATE | EXPOSURE DATE | MANGANSE MG/L | NICKEL MG/L | ZINC MG/L | IRON MG/L | LEAD MG/L | VANADIUM MG/L | ALUMINUM MG/L |
|-----------------|------------------|------------------|----------------|--------------|--------------|--------------|------------------|------------------|
| JAN 28,85 | JAN 2,85 | ***** | ***** | ***** | ***** | ***** | ***** | ***** |
| FEB 28,85 | JAN 28,85 | 0.001 | < 0.0004 | 0.003 | 0.014 | 0.008 | < 0.0004 | 0.012 |
| MAR 28,85 | FEB 28,85 | 0.002 | 0.0002 | 0.005 | 0.031 | 0.004 | < 0.0004 | 0.022 |
| APR 23,85 | MAR 28,85 | 0.004 | 0.0003 | D 0.004 | 0.035 | 0.002 | < 0.0004 | 0.036 |
| MAY 21,85 | APR 23,85 | 0.016 | < 0.0002 | 0.010 | 0.257 | 0.013 | < 0.0004 | 0.235 |
| JUN 18,85 | MAY 21,85 | 0.002 | < 0.0002 | 0.003 | 0.022 | 0.003 | < 0.0004 | 0.031 |
| JUL 16,85 | JUN 18,85 | 0.004 | 0.0008 | 0.005 | 0.034 | 0.003 | < 0.0004 | 0.051 |
| AUG 13,85 | JUL 16,85 | 0.004 | < 0.0002 | 0.008 | 0.056 | 0.007 | < 0.0004 | 0.065 |
| SEP 10,85 | AUG 13,85 | 0.001 | 0.0009 | 0.002 | 0.016 | 0.003 | < 0.0004 | 0.024 |
| OCT 8,85 | SEP 10,85 | 0.002 | 0.0010 | 0.009 | 0.067 | 0.003 | < 0.0004 | 0.054 |
| NOV 5,85 | OCT 8,85 | < 0.001 | < 0.0002 | 0.003 | 0.008 | 0.002 | < 0.0004 | 0.014 |
| DEC 3,85 | NOV 5,85 | 0.001 | 0.0003 | 0.003 | 0.044 | 0.003 | < 0.0004 | 0.022 |
| DEC 31,85 | DEC 3,85 | 0.001 | 0.0004 | 0.002 | 0.021 | 0.002 | < 0.0004 | 0.025 |

ONTARIO MINISTRY OF THE ENVIRONMENT
 CUMULATIVE SAMPLING ANALYSIS RESULTS
 APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : CLOYNE/CUMULATIVE PRECIP.

#14

PAGE : 3

| REMOVAL DATE | EXPOSURE DATE | COPPER MG/L | CADMIUM MG/L | FREE H+ MG/L |
|-----------------|------------------|----------------|-----------------|-----------------|
| JAN 28,85 | JAN 2,85 | ***** | ***** | 0.0912 |
| FEB 28,85 | JAN 28,85 | < 0.0003 | < 0.00004 | 0.0661 |
| MAR 28,85 | FEB 28,85 | 0.0011 | 0.00006 | 0.0417 |
| APR 23,85 | MAR 28,85 | 0.0009 | 0.00008 | 0.0457 |
| MAY 21,85 | APR 23,85 | 0.0017 | 0.00002 | 0.0676 |
| JUN 18,85 | MAY 21,85 | 0.0003 | 0.00005 | 0.0646 |
| JUL 16,85 | JUN 18,85 | 0.0007 | < 0.00002 | 0.0832 |
| AUG 13,85 | JUL 16,85 | 0.0008 | 0.00003 | 0.0741 |
| SEP 10,85 | AUG 13,85 | 0.0009 | 0.00005 | 0.0513 |
| OCT 8,85 | SEP 10,85 | 0.0011 | 0.00012 | 0.0182 |
| NOV 5,85 | OCT 8,85 | 0.0006 | 0.00006 | 0.0372 |
| DEC 3,85 | NOV 5,85 | 0.0008 | 0.00011 | 0.0302 |
| DEC 31,85 | DEC 3,85 | 0.0007 | 0.00010 | 0.0692 |

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : DALHOUSIE MILLS/CUMULATIVE PRECIP. #16

PAGE : 1

| REMOVAL DATE | EXPOSURE DATE | SAMPLING START HR. | SAMPLING END HR. | SAMPLE TYPE 01-RAIN 02-SNOW 03-COMP/04-OTHER | GAUGE DEPTH(MM) | GAUGE TYPE 02,03-APIOS 09-AES | SAMPLE NUMBER | PROJECT CODE 02-APIOS 03-SPECIAL | SUBPROJECT CODE 01-MOE 03-AES | SAMPLER EFFICI- ENCY (%) | COMMENTS FIELD OFFICE |
|-----------------|------------------|--------------------------|------------------------|--|--------------------|--|------------------|---|--|-----------------------------------|--------------------------|
| JAN 29,85 | JAN 2,85 | 800 | 900 | 2 | 20.0 | 3 | 24412 | 2 | 1 | *** | EG |
| FEB 26,85 | JAN 29,85 | 900 | 800 | 3 | 69.0 | 2 | 24418 | 2 | 1 | 69 | |
| MAR 26,85 | FEB 26,85 | 800 | 900 | 1 | 77.0 | 2 | 24428 | 2 | 1 | 63 | CDQ |
| APR 23,85 | MAR 26,85 | 900 | 800 | 1 | 84.3 | 9 | 24434 | 2 | 1 | 55 | ABCD |
| MAY 21,85 | APR 23,85 | 800 | 1800 | 1 | 35.0 | 3 | 24441 | 2 | 1 | 90 | ACD |
| JUN 18,85 | MAY 21,85 | 1800 | 1800 | 1 | 46.0 | 3 | 24450 | 2 | 1 | 109 | |
| JUL 15,85 | JUN 18,85 | 1800 | 1800 | 1 | 91.0 | 3 | 24457 | 2 | 1 | 93 | ACD |
| AUG 13,85 | JUL 15,85 | 1800 | 800 | 1 | 35.0 | 3 | 24465 | 2 | 1 | 91 | ACD |
| SEP 8,85 | AUG 13,85 | 800 | 1800 | 1 | 80.0 | 3 | 24471 | 2 | 1 | 89 | CD |
| OCT 6,85 | SEP 8,85 | 1800 | 1800 | 1 | 75.0 | 3 | 24478 | 2 | 1 | 56 | |
| NOV 3,85 | OCT 6,85 | 1800 | 1800 | 3 | 58.0 | 3 | 24484 | 2 | 1 | 90 | |
| DEC 1,85 | NOV 3,85 | 1800 | 1800 | 3 | 79.0 | 2 | 24490 | 2 | 1 | 46 | NHCH |
| DEC 31,85 | DEC 1,85 | 1800 | 800 | 2 | 38.0 | 2 | 24497 | 2 | 1 | 88 | |

| REMOVAL DATE | EXPOSURE DATE | VOLUME ML | CONDUCT. UMHO/CM | PH LAB | TOTAL H+ GRAN MG/L | SULPHATE MG/L | NITRATE AS N MG/L | CALCIUM MG/L |
|-----------------|------------------|--------------|---------------------|-----------|--------------------------|------------------|-------------------------|-----------------|
| JAN 29,85 | JAN 2,85 | ***** | ***** | ***** | ***** | ***** | ***** | ***** |
| FEB 26,85 | JAN 29,85 | 1567.0 | 36.0 | 4.15 | 0.0991 | 2.30 | 0.63 | ***** |
| MAR 26,85 | FEB 26,85 | 1587.0 | 30.1 | 4.30 | 0.0849 | 1.95 | 0.76 | 0.32 |
| APR 23,85 | MAR 26,85 | 1514.0 | 26.5 | U 6.94 | LG 0.0366 | 4.30 | 0.57 | 0.34 |
| MAY 21,85 | APR 23,85 | 1029.0 | 30.4 | UG 4.66 | 0.0612 | 4.95 | 0.69 | D 1.04 |
| JUN 18,85 | MAY 21,85 | 1642.0 | 25.9 | 4.59 | 0.0665 | 3.55 | 0.42 | 0.45 |
| JUL 15,85 | JUN 18,85 | 2755.0 | 21.1 | 4.47 | 0.0613 | 2.40 | D 0.30 | D 0.21 |
| AUG 13,85 | JUL 15,85 | 1040.0 | 23.5 | 4.57 | 0.0588 | 2.90 | 0.50 | 0.34 |
| SEP 8,85 | AUG 13,85 | 2336.0 | 40.7 | 4.23 | 0.1230 | 4.35 | 0.49 | 0.20 |
| OCT 6,85 | SEP 8,85 | 1384.0 | LG 9.6 | UG 4.78 | LG 0.0383 | LG 1.00 | LG 0.14 | ***** |
| NOV 3,85 | OCT 6,85 | 1706.0 | 27.2 | 4.33 | 0.0753 | 2.55 | 0.41 | 0.20 |
| DEC 1,85 | NOV 3,85 | 1180.0 | LG 7.9 | UG 5.27 | LG 0.0252 | LG 0.70 | LG 0.14 | 0.07 |
| DEC 31,85 | DEC 1,85 | 1087.0 | 22.1 | 4.36 | 0.0622 | 1.10 | 0.62 | 0.38 |

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : DALHOUSIE MILLS/CUMULATIVE PRECIP. #16

PAGE : 2

| REMOVAL DATE | EXPOSURE DATE | CHLORIDE MG/L | KJELDAHL AS N MG/L | MAGNESIUM MG/L | POTASSIUM MG/L | SODIUM MG/L | AMMONIUM AS N MG/L | PHOSPHORUS MG/L |
|-----------------|------------------|------------------|--------------------------|-------------------|-------------------|----------------|--------------------------|--------------------|
| JAN 29,85 | JAN 2,85 | ***** | ***** | ***** | ***** | ***** | ***** | ***** |
| FEB 26,85 | JAN 29,85 | 0.24 | D 0.47 | ***** | ***** | ***** | D 0.240 | 0.009 |
| MAR 26,85 | FEB 26,85 | 0.23 | 0.43 | 0.040 | <T 0.020 | 0.095 | 0.245 | <T 0.005 |
| APR 23,85 | MAR 26,85 | U 0.36 | U 3.60 | 0.065 | U 0.305 | 0.215 | U 2.200 | U 0.230 |
| MAY 21,85 | APR 23,85 | UG 0.34 | 1.27 | D 0.160 | U 0.395 | 0.090 | 0.885 | 0.057 |
| JUN 18,85 | MAY 21,85 | 0.16 | 0.87 | 0.060 | 0.110 | 0.060 | 0.560 | 0.011 |
| JUL 15,85 | JUN 18,85 | D 0.09 | D 0.42 | 0.035 | 0.060 | 0.015 | D 0.330 | <T 0.002 |
| AUG 13,85 | JUL 15,85 | 0.14 | 0.78 | 0.050 | 0.060 | 0.035 | 0.565 | D 0.018 |
| SEP 8,85 | AUG 13,85 | 0.09 | D 0.53 | 0.035 | 0.025 | 0.030 | 0.475 | 0.007 |
| OCT 6,85 | SEP 8,85 | 0.10 | LG 0.14 | ***** | 0.065 | 0.065 | LG 0.085 | <T 0.004 |
| NOV 3,85 | OCT 6,85 | 0.13 | 0.35 | 0.045 | 0.035 | 0.040 | 0.275 | <W 0.001 |
| DEC 1,85 | NOV 3,85 | 0.09 | 0.19 | <T 0.010 | <T 0.005 | 0.055 | 0.150 | <T 0.003 |
| DEC 31,85 | DEC 1,85 | 0.23 | 0.25 | 0.040 | 0.075 | 0.145 | 0.145 | 0.006 |

| REMOVAL DATE | EXPOSURE DATE | MANGANESE MG/L | NICKEL MG/L | ZINC MG/L | IRON MG/L | LEAD MG/L | VANADIUM MG/L | ALUMINUM MG/L |
|-----------------|------------------|-------------------|----------------|--------------|--------------|--------------|------------------|------------------|
| JAN 29,85 | JAN 2,85 | ***** | ***** | ***** | ***** | ***** | ***** | ***** |
| FEB 26,85 | JAN 29,85 | D 0.003 | < 0.0003 | 0.005 | 0.015 | 0.008 | < 0.0004 | 0.024 |
| MAR 26,85 | FEB 26,85 | 0.006 | 0.0006 | 0.007 | 0.060 | 0.014 | D 0.0007 | 0.060 |
| APR 23,85 | MAR 26,85 | UG 0.008 | 0.0007 | 0.010 | 0.071 | 0.003 | < 0.0004 | 0.095 |
| MAY 21,85 | APR 23,85 | 0.018 | 0.0005 | 0.012 | UG 0.267 | 0.014 | 0.0005 | U 0.393 |
| JUN 18,85 | MAY 21,85 | 0.008 | 0.0013 | 0.004 | 0.044 | 0.006 | 0.0008 | 0.130 |
| JUL 15,85 | JUN 18,85 | 0.005 | 0.0013 | 0.005 | 0.031 | 0.006 | < 0.0004 | 0.061 |
| AUG 13,85 | JUL 15,85 | 0.003 | < 0.0002 | 0.004 | 0.029 | 0.004 | < 0.0004 | 0.042 |
| SEP 8,85 | AUG 13,85 | D 0.006 | 0.0006 | D 0.007 | 0.025 | 0.011 | < 0.0004 | 0.038 |
| OCT 6,85 | SEP 8,85 | < 0.001 | 0.0004 | 0.003 | 0.018 | 0.010 | < 0.0004 | 0.031 |
| NOV 3,85 | OCT 6,85 | 0.002 | 0.0005 | 0.007 | 0.010 | 0.004 | < 0.0004 | 0.029 |
| DEC 1,85 | NOV 3,85 | D 0.004 | < 0.0002 | 0.002 | 0.019 | 0.003 | < 0.0004 | 0.036 |
| DEC 31,85 | DEC 1,85 | 0.003 | 0.0015 | 0.005 | 0.029 | 0.003 | < 0.0004 | 0.031 |

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : DALHOUSIE MILLS/CUMULATIVE PRECIP. #16

PAGE : 3

| REMOVAL DATE | EXPOSURE DATE | COPPER MG/L | CADMIUM MG/L | FREE H+ MG/L |
|-----------------|------------------|----------------|-----------------|-----------------|
| JAN 29,85 | JAN 2,85 | ***** | ***** | ***** |
| FEB 26,85 | JAN 29,85 | < 0.0003 | 0.00013 | 0.0708 |
| MAR 26,85 | FEB 26,85 | 0.0018 | 0.00019 | 0.0501 |
| APR 23,85 | MAR 26,85 | 0.0013 | 0.00024 | U 0.0001 |
| MAY 21,85 | APR 23,85 | 0.0130 | UG 0.00021 | LG 0.0219 |
| JUN 18,85 | MAY 21,85 | 0.0011 | UG 0.00019 | 0.0257 |
| JUL 15,85 | JUN 18,85 | 0.0019 | < 0.00002 | 0.0339 |
| AUG 13,85 | JUL 15,85 | 0.0015 | < 0.00002 | 0.0269 |
| SEP 8,85 | AUG 13,85 | 0.0006 | 0.00009 | 0.0589 |
| OCT 6,85 | SEP 8,85 | D 0.0027 | UG 0.00021 | LG 0.0166 |
| NOV 3,85 | OCT 6,85 | 0.0002 | 0.00020 | 0.0468 |
| DEC 1,85 | NOV 3,85 | 0.0003 | 0.00004 | LG 0.0054 |
| DEC 31,85 | DEC 1,85 | 0.0020 | 0.00022 | 0.0437 |

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : GOLDEN LAKE/CUMULATIVE PRECIP.

#17

PAGE : 1

| REMOVAL DATE | EXPOSURE DATE | SAMPLING START HR. | END HR. | SAMPLE TYPE 01-RAIN 02-SNOW 03-COMP/04-OTHER | GAUGE DEPTH(MM) | GAUGE TYPE 02,03-APIOS 09-AES | SAMPLE NUMBER | PROJECT CODE 02-APIOS 03-SPECIAL | SUBPROJECT CODE 01-HOE 03-AES | SAMPLER EFFICI- ENCY (%) | COMMENTS FIELD OFFICE |
|-----------------|------------------|--------------------------|------------|--|--------------------|--|------------------|---|--|-----------------------------------|--------------------------|
| JAN 29,85 | JAN 2,85 | 830 | 745 | 2 | 38.0 | 2 | 24414 | 2 | 1 | *** | GE |
| FEB 26,85 | JAN 29,85 | 745 | 730 | 3 | 54.0 | 2 | 24419 | 2 | 1 | 96 | C |
| MAR 26,85 | FEB 26,85 | 735 | 735 | 3 | 80.0 | 2 | 24429 | 2 | 1 | 78 | |
| APR 23,85 | MAR 26,85 | 735 | 730 | 3 | 87.0 | 9 | 24435 | 2 | 1 | I 101 | C |
| MAY 21,85 | APR 23,85 | 730 | 630 | 1 | 42.0 | 3 | 24442 | 2 | 1 | 88 | C |
| JUN 18,85 | MAY 21,85 | 630 | 825 | 1 | 60.0 | 3 | 24451 | 2 | 1 | 84 | C |
| JUL 16,85 | JUN 18,85 | 825 | 1000 | 1 | 26.0 | 3 | 24458 | 2 | 1 | 90 | C |
| AUG 13,85 | JUL 16,85 | 1000 | 1925 | 1 | 55.0 | 3 | 24466 | 2 | 1 | 81 | BC |
| SEP 10,85 | AUG 13,85 | 1925 | 730 | 1 | 86.0 | 3 | 24472 | 2 | 1 | 97 | C |
| OCT 8,85 | SEP 10,85 | 730 | 700 | 1 | 40.0 | 3 | 24479 | 2 | 1 | 88 | |
| NOV 5,85 | OCT 8,85 | 700 | 735 | 3 | 46.0 | 3 | 24485 | 2 | 1 | 97 | |
| DEC 3,85 | NOV 5,85 | 735 | 730 | 3 | 78.3 | 9 | 24491 | 2 | 1 | I 70 | |
| DEC 31,85 | DEC 3,85 | 730 | 1230 | 3 | 31.0 | 2 | 24498 | 2 | 1 | 68 | |

| REMOVAL DATE | EXPOSURE DATE | VOLUME ML | CONDUCT. UMHO/CM | PH LAB | TOTAL H+ GRAN MG/L | SULPHATE MG/L | NITRATE AS N MG/L | CALCIUM MG/L |
|-----------------|------------------|--------------|---------------------|-----------|--------------------------|------------------|-------------------------|-----------------|
| JAN 29,85 | JAN 2,85 | ***** | ***** | ***** | ***** | ***** | ***** | ***** |
| FEB 26,85 | JAN 29,85 | 1695.0 | 21.8 | 4.37 | 0.0642 | 1.35 | D 0.38 | ***** |
| MAR 26,85 | FEB 26,85 | 2036.0 | 18.8 | 4.52 | 0.0584 | 1.45 | 0.43 | 0.27 |
| APR 23,85 | MAR 26,85 | 2868.0 | 29.3 | 4.43 | 0.0699 | 3.55 | 0.59 | 0.52 |
| MAY 21,85 | APR 23,85 | 1206.0 | 33.1 | 4.25 | 0.0808 | 3.45 | 0.62 | 0.24 |
| JUN 18,85 | MAY 21,85 | 1653.0 | LG 14.9 | UG 4.64 | LG 0.0468 | LG 1.60 | 0.25 | 0.13 |
| JUL 16,85 | JUN 18,85 | 765.0 | 39.7 | 4.18 | 0.0968 | 4.40 | 0.56 | 0.42 |
| AUG 13,85 | JUL 16,85 | 1458.0 | 25.6 | 4.55 | 0.0577 | 2.60 | 0.38 | 0.34 |
| SEP 10,85 | AUG 13,85 | 2712.0 | 29.2 | 4.27 | 0.0844 | 2.85 | 0.31 | 0.13 |
| OCT 8,85 | SEP 10,85 | 1146.0 | 43.2 | 4.01 | 0.1240 | 4.05 | 0.64 | 0.33 |
| NOV 5,85 | OCT 8,85 | 1461.0 | 17.8 | 4.53 | 0.0531 | 1.60 | 0.25 | 0.11 |
| DEC 3,85 | NOV 5,85 | 1792.0 | 22.0 | 4.40 | 0.0642 | 1.60 | 0.41 | D 0.14 |
| DEC 31,85 | DEC 3,85 | 694.0 | 32.6 | 4.14 | 0.0932 | 1.45 | 0.83 | 0.25 |

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : GOLDEN LAKE/CUMULATIVE PRECIP.

#17

PAGE : 2

| REMOVAL DATE | EXPOSURE DATE | CHLORIDE MG/L | KJELDAHL AS N MG/L | MAGNESIM MG/L | POTASSIM MG/L | SODIUM MG/L | AMMONIUM AS N MG/L | PHOSPHOR MG/L |
|-----------------|------------------|------------------|--------------------------|------------------|------------------|----------------|--------------------------|------------------|
| JAN 29,85 | JAN 2,85 | ***** | ***** | ***** | ***** | ***** | ***** | ***** |
| FEB 26,85 | JAN 29,85 | 0.18 | 0.17 | ***** | ***** | ***** | ***** | ***** |
| MAR 26,85 | FEB 26,85 | 0.11 | 0.29 | 0.040 | <T 0.015 | 0.050 | 0.060 | <T 0.005 |
| APR 23,85 | MAR 26,85 | 0.14 | 0.80 | 0.060 | 0.030 | 0.060 | 0.165 | <T 0.004 |
| MAY 21,85 | APR 23,85 | <T 0.04 | 0.75 | 0.040 | 0.025 | 0.035 | 0.640 | 0.010 |
| JUN 18,85 | MAY 21,85 | <T 0.06 | 0.22 | 0.030 | 0.045 | <T 0.010 | 0.680 | <T 0.005 |
| JUL 16,85 | JUN 18,85 | 0.14 | 0.56 | 0.075 | U 0.155 | 0.060 | LG 0.140 | 0.006 |
| AUG 13,85 | JUL 16,85 | 0.11 | 0.45 | 0.050 | 0.045 | 0.025 | 0.480 | D 0.014 |
| SEP 10,85 | AUG 13,85 | <T 0.06 | 0.23 | 0.020 | <T 0.020 | 0.025 | 0.380 | 0.006 |
| OCT 8,85 | SEP 10,85 | 0.11 | 0.29 | 0.055 | 0.050 | 0.020 | LG 0.175 | 0.006 |
| NOV 5,85 | OCT 8,85 | <T 0.05 | 0.18 | <T 0.010 | <W 0.005 | 0.025 | 0.245 | <T 0.005 |
| DEC 3,85 | NOV 5,85 | <T 0.06 | 0.19 | 0.015 | <W 0.005 | <T 0.020 | 0.140 | <T 0.001 |
| DEC 31,85 | DEC 3,85 | 0.14 | 0.25 | 0.025 | 0.040 | 0.030 | 0.150 | <T 0.002 |
| | | | | | | 0.070 | 0.155 | <T 0.003 |

| REMOVAL DATE | EXPOSURE DATE | MANGANSE MG/L | NICKEL MG/L | ZINC MG/L | IRON MG/L | LEAD MG/L | VANADIUM MG/L | ALUMINUM MG/L |
|-----------------|------------------|------------------|----------------|--------------|--------------|--------------|------------------|------------------|
| JAN 29,85 | JAN 2,85 | ***** | ***** | ***** | ***** | ***** | ***** | ***** |
| FEB 26,85 | JAN 29,85 | 0.001 | 0.0006 | 0.002 | 0.015 | D 0.001 | < 0.0004 | 0.016 |
| MAR 26,85 | FEB 26,85 | 0.002 | 0.0004 | 0.002 | 0.043 | 0.011 | < 0.0004 | 0.034 |
| APR 23,85 | MAR 26,85 | 0.006 | 0.0004 | 0.004 | 0.089 | 0.001 | < 0.0004 | 0.074 |
| MAY 21,85 | APR 23,85 | 0.004 | < 0.0002 | 0.005 | 0.052 | 0.012 | < 0.0004 | 0.040 |
| JUN 18,85 | MAY 21,85 | 0.004 | < 0.0002 | 0.003 | 0.048 | 0.004 | < 0.0004 | 0.056 |
| JUL 16,85 | JUN 18,85 | 0.008 | 0.0014 | 0.011 | 0.118 | 0.005 | < 0.0004 | 0.150 |
| AUG 13,85 | JUL 16,85 | 0.005 | < 0.0002 | 0.004 | 0.036 | 0.005 | < 0.0004 | 0.046 |
| SEP 10,85 | AUG 13,85 | 0.001 | 0.0004 | 0.005 | 0.027 | 0.002 | < 0.0004 | 0.020 |
| OCT 8,85 | SEP 10,85 | < 0.001 | 0.0003 | 0.002 | 0.030 | 0.010 | < 0.0004 | 0.035 |
| NOV 5,85 | OCT 8,85 | 0.001 | 0.0003 | 0.001 | 0.013 | < 0.002 | < 0.0004 | 0.030 |
| DEC 3,85 | NOV 5,85 | 0.001 | < 0.0002 | 0.002 | 0.019 | 0.005 | < 0.0004 | 0.022 |
| DEC 31,85 | DEC 3,85 | 0.001 | 0.0005 | 0.003 | 0.016 | 0.003 | < 0.0004 | 0.022 |

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ONTARIO MINISTRY OF THE ENVIRONMENT
 CUMULATIVE SAMPLING ANALYSIS RESULTS
 APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : GOLDEN LAKE/CUMULATIVE PRECIP.

#17

PAGE : 3

| REMOVAL DATE | EXPOSURE DATE | COPPER MG/L | CADMIUM MG/L | FREE H+ MG/L |
|-----------------|------------------|----------------|-----------------|-----------------|
| JAN 29,85 | JAN 2,85 | ***** | ***** | ***** |
| FEB 26,85 | JAN 29,85 | < 0.0003 | 0.00010 | 0.0427 |
| MAR 26,85 | FEB 26,85 | 0.0016 | 0.00004 | 0.0302 |
| APR 23,85 | MAR 26,85 | 0.0009 | 0.00010 | 0.0372 |
| MAY 21,85 | APR 23,85 | UG 0.0076 | < 0.00002 | 0.0562 |
| JUN 18,85 | MAY 21,85 | 0.0006 | 0.00005 | LG 0.0229 |
| JUL 16,85 | JUN 18,85 | 0.0024 | 0.00003 | 0.0661 |
| AUG 13,85 | JUL 16,85 | < 0.0003 | U 0.00310 | 0.0282 |
| SEP 10,85 | AUG 13,85 | 0.0011 | UG 0.00011 | 0.0537 |
| OCT 8,85 | SEP 10,85 | 0.0012 | B 0.00069 | 0.0977 |
| NOV 5,85 | OCT 8,85 | 0.0010 | 0.00005 | 0.0295 |
| DEC 3,85 | NOV 5,85 | 0.0003 | 0.00007 | 0.0398 |
| DEC 31,85 | DEC 3,85 | 0.0009 | 0.00009 | 0.0724 |

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : SMITH'S FALLS/CUMULATIVE PRECIP. #15

PAGE : 1

| REMOVAL DATE | EXPOSURE DATE | SAMPLING START HR. | END HR. | SAMPLE TYPE 01-RAIN 02-SNOW 03-COMP/04-OTHER | GAUGE DEPTH(MM) | GAUGE TYPE 02,03-APIOS 09-AES | SAMPLE NUMBER | PROJECT CODE 02-APIOS 03-SPECIAL | SUBPROJECT CODE 01-MOE 03-AES | SAMPLER EFFICI- ENCY (%) | COMMENTS FIELD OFFICE |
|-----------------|------------------|--------------------------|------------|--|--------------------|--|------------------|---|--|-----------------------------------|--------------------------|
| JAN 29,85 | JAN 2,85 | 1100 | 945 | 2 | 28.0 | 2 | 24411 | 2 | 1 | 50 | |
| FEB 26,85 | JAN 29,85 | 945 | 1030 | 3 | 59.0 | 2 | 24417 | 2 | 1 | 59 | |
| MAR 26,85 | FEB 26,85 | 1030 | 1310 | 1 | 64.0 | 2 | 24427 | 2 | 1 | 50 | C |
| APR 23,85 | MAR 26,85 | 1310 | 940 | 1 | 74.2 | 9 | 24433 | 2 | 1 | I 56 | CD |
| MAY 21,85 | APR 23,85 | 940 | 1055 | 1 | 4.0 | 3 | 24440 | 2 | 1 | U 784 | ACDG |
| JUN 18,85 | MAY 21,85 | 1055 | 1145 | 1 | 68.0 | 3 | 24449 | 2 | 1 | 89 | D |
| JUL 16,85 | JUN 18,85 | 1145 | 1100 | 1 | 60.0 | 3 | 24456 | 2 | 1 | 83 | AD |
| AUG 13,85 | JUL 16,85 | 1100 | 1105 | 1 | 29.0 | 3 | 24464 | 2 | 1 | 86 | |
| SEP 10,85 | AUG 13,85 | 1105 | 1000 | 1 | 110.0 | 3 | 24470 | 2 | 1 | 80 | C |
| OCT 8,85 | SEP 10,85 | 1000 | 1115 | 1 | 44.0 | 3 | 24476 | 2 | 1 | 79 | CD |
| NOV 5,85 | OCT 8,85 | 1115 | 1050 | 3 | 62.0 | 3 | 24483 | 2 | 1 | 70 | |
| DEC 3,85 | NOV 5,85 | 1050 | 1010 | 3 | 65.0 | 2 | 24489 | 2 | 1 | 94 | |
| DEC 31,85 | DEC 3,85 | 1010 | 1014 | 2 | 38.0 | 2 | 24496 | 2 | 1 | 52 | |

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| REMOVAL DATE | EXPOSURE DATE | VOLUME ML | CONDUCT. UMHO/CM | PH LAB | TOTAL H+ GRAN MG/L | SULPHATE MG/L | NITRATE AS N MG/L | CALCIUM MG/L |
|-----------------|------------------|--------------|---------------------|-----------|--------------------------|------------------|-------------------------|-----------------|
| JAN 29,85 | JAN 2,85 | 457.0 | 42.7 | 4.03 | UG 0.1110 | 0.90 | UG 1.21 | 0.11 |
| FEB 26,85 | JAN 29,85 | 1147.0 | 32.3 | 4.19 | 0.0906 | 1.90 | 0.55 | ***** |
| MAR 26,85 | FEB 26,85 | 1042.0 | 26.2 | 4.35 | 0.0770 | 2.05 | 0.55 | 0.26 |
| APR 23,85 | MAR 26,85 | 1357.0 | 26.5 | 4.40 | 0.0746 | 2.75 | 0.54 | 0.37 |
| MAY 21,85 | APR 23,85 | 1019.0 | 37.0 | 4.25 | 0.0875 | 4.35 | 0.74 | 0.50 |
| JUN 18,85 | MAY 21,85 | 1982.0 | 25.0 | 4.48 | 0.0657 | 2.80 | 0.39 | 0.23 |
| JUL 16,85 | JUN 18,85 | 1625.0 | 34.9 | 4.27 | 0.0860 | 4.00 | 0.57 | 0.46 |
| AUG 13,85 | JUL 16,85 | 812.0 | 46.4 | 4.14 | 0.1170 | 4.80 | 0.70 | 0.41 |
| SEP 10,85 | AUG 13,85 | 2887.0 | 30.0 | 4.32 | 0.0842 | 3.10 | 0.37 | 0.17 |
| OCT 8,85 | SEP 10,85 | 1130.0 | LG 16.6 | U 6.99 | LG 0.0255 | 3.10 | 0.57 | U 1.47 |
| NOV 5,85 | OCT 8,85 | 1424.0 | 23.8 | 4.65 | LG 0.0480 | 3.60 | 0.49 | D 0.73 |
| DEC 3,85 | NOV 5,85 | 1985.0 | 14.3 | 4.64 | LG 0.0435 | 1.00 | 0.24 | 0.09 |
| DEC 31,85 | DEC 3,85 | 646.0 | 31.3 | 4.25 | 0.0768 | 1.95 | 0.91 | 0.56 |

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : SMITH'S FALLS/CUMULATIVE PRECIP.

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PAGE : 2

| REMOVAL DATE | EXPOSURE DATE | CHLORIDE MG/L | KJELDAHL AS N MG/L | MAGNESIUM MG/L | POTASSIUM MG/L | SODIUM MG/L | AMMONIUM AS N MG/L | PHOSPHOR MG/L |
|-----------------|------------------|------------------|--------------------------|-------------------|-------------------|----------------|--------------------------|------------------|
| JAN 29,85 | JAN 2,85 | 0.39 | 0.18 | 0.020 | D 0.175 | 0.210 | 0.075 | 0.010 |
| FEB 26,85 | JAN 29,85 | 0.24 | 0.18 | ***** | ***** | ***** | 0.120 | <T 0.005 |
| MAR 26,85 | FEB 26,85 | 0.15 | 0.37 | 0.040 | 0.000 | 0.070 | 0.215 | <T 0.006 |
| APR 23,85 | MAR 26,85 | 0.22 | 0.59 | 0.065 | 0.025 | 0.080 | 0.405 | 0.007 |
| MAY 21,85 | APR 23,85 | 0.12 | 1.03 | 0.095 | 0.030 | 0.050 | 0.845 | <T 0.003 |
| JUN 18,85 | MAY 21,85 | 0.10 | 0.46 | 0.050 | 0.045 | 0.050 | 0.370 | <T 0.003 |
| JUL 16,85 | JUN 18,85 | 0.12 | 0.60 | 0.080 | 0.070 | 0.035 | 0.540 | <T 0.004 |
| AUG 13,85 | JUL 16,85 | 0.18 | 0.63 | 0.060 | <T 0.010 | 0.035 | 0.535 | <T 0.005 |
| SEP 10,85 | AUG 13,85 | <T 0.06 | 0.32 | 0.035 | <T 0.010 | <T 0.020 | 0.280 | <T 0.005 |
| OCT 8,85 | SEP 10,85 | D 0.18 | 0.32 | U 0.535 | 0.055 | 0.050 | 0.205 | D 0.016 |
| NOV 5,85 | OCT 8,85 | 0.19 | 0.39 | B 0.250 | 0.025 | 0.055 | 0.315 | D 0.006 |
| DEC 3,85 | NOV 5,85 | <T 0.04 | 0.12 | <T 0.010 | <T 0.005 | 0.025 | D 0.095 | <T 0.001 |
| DEC 31,85 | DEC 3,85 | UG 0.45 | 0.53 | B 0.150 | 0.055 | 0.270 | 0.245 | 0.009 |

| REMOVAL DATE | EXPOSURE DATE | MANGANESE MG/L | NICKEL MG/L | ZINC MG/L | IRON MG/L | LEAD MG/L | VANADIUM MG/L | ALUMINUM MG/L |
|-----------------|------------------|-------------------|----------------|--------------|--------------|--------------|------------------|------------------|
| JAN 29,85 | JAN 2,85 | D 0.002 | 0.0005 | 0.010 | 0.029 | 0.011 | < 0.0004 | 0.036 |
| FEB 26,85 | JAN 29,85 | 0.001 | < 0.0002 | 0.005 | 0.006 | 0.006 | < 0.0004 | 0.015 |
| MAR 26,85 | FEB 26,85 | 0.003 | 0.0004 | 0.008 | 0.053 | 0.008 | 0.0004 | 0.045 |
| APR 23,85 | MAR 26,85 | 0.006 | 0.0006 | D 0.020 | 0.057 | 0.006 | < 0.0004 | 0.066 |
| MAY 21,85 | APR 23,85 | 0.007 | < 0.0002 | 0.009 | 0.051 | 0.008 | 0.0004 | 0.057 |
| JUN 18,85 | MAY 21,85 | 0.004 | 0.0008 | 0.001 | 0.029 | 0.005 | < 0.0004 | 0.029 |
| JUL 16,85 | JUN 18,85 | 0.007 | 0.0003 | 0.010 | 0.078 | 0.007 | < 0.0004 | 0.107 |
| AUG 13,85 | JUL 16,85 | 0.003 | < 0.0002 | 0.007 | 0.032 | 0.004 | < 0.0004 | 0.046 |
| SEP 10,85 | AUG 13,85 | 0.002 | 0.0004 | 0.004 | 0.017 | < 0.001 | < 0.0004 | 0.020 |
| OCT 8,85 | SEP 10,85 | 0.001 | D 0.0007 | 0.004 | 0.097 | U 0.024 | < 0.0004 | 0.065 |
| NOV 5,85 | OCT 8,85 | D 0.006 | 0.0004 | 0.008 | D 0.055 | 0.006 | < 0.0004 | 0.044 |
| DEC 3,85 | NOV 5,85 | < 0.001 | < 0.0002 | 0.002 | 0.014 | 0.003 | < 0.0004 | 0.015 |
| DEC 31,85 | DEC 3,85 | 0.004 | 0.0014 | 0.032 | 0.037 | 0.006 | D 0.0008 | 0.019 |

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : SMITH'S FALLS/CUMULATIVE PRECIP.

#15

PAGE : 3

| REMOVAL DATE | EXPOSURE DATE | COPPER MG/L | CADMIUM MG/L | FREE H+ MG/L |
|-----------------|------------------|----------------|-----------------|-----------------|
| JAN 29,85 | JAN 2,85 | < 0.0006 | 0.00006 | 0.0933 |
| FEB 26,85 | JAN 29,85 | 0.0008 | 0.00005 | 0.0646 |
| MAR 26,85 | FEB 26,85 | 0.0023 | 0.00026 | 0.0447 |
| APR 23,85 | MAR 26,85 | 0.0023 | 0.00040 | 0.0398 |
| MAY 21,85 | APR 23,85 | 0.0021 | < 0.00002 | 0.0562 |
| JUN 18,85 | MAY 21,85 | < 0.0011 | 0.00003 | 0.0331 |
| JUL 16,85 | JUN 18,85 | 0.0023 | 0.00002 | 0.0537 |
| AUG 13,85 | JUL 16,85 | 0.0030 | 0.00007 | 0.0724 |
| SEP 10,85 | AUG 13,85 | 0.0005 | UG 0.00020 | 0.0479 |
| OCT 8,85 | SEP 10,85 | 0.0011 | 0.00008 | U 0.0001 |
| NOV 5,85 | OCT 8,85 | 0.0007 | 0.00013 | 0.0224 |
| DEC 3,85 | NOV 5,85 | 0.0001 | 0.00012 | 0.0229 |
| DEC 31,85 | DEC 3,85 | 0.0026 | 0.00020 | 0.0562 |

PART VI

NORTHEASTERN REGION

CUMULATIVE PRECIPITATION CHEMISTRY LISTINGS

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : MOOSONEE/CUMULATIVE PRECIP.

#39

PAGE : 1

| REMOVAL DATE | EXPOSURE DATE | SAMPLING START HR. | END HR. | SAMPLE TYPE 01-RAIN 02-SNOW 03-COMP/04-OTHER | GAUGE DEPTH(MM) | GAUGE TYPE 02,03-APIOS 09-AES | SAMPLE NUMBER | PROJECT CODE 02-APIOS 03-SPECIAL | SUBPROJECT CODE 01-HOE 03-AES | SAMPLER EFFICI- ENCY (%) | COMMENTS FIELD OFFICE |
|-----------------|------------------|--------------------------|------------|--|--------------------|--|------------------|---|--|-----------------------------------|--------------------------|
| DEC 29,85 | DEC 1,85 | 1300 | 1400 | 2 | 29.7 | 9 | 35726 | 2 | 1 | I 16 | C C |

| REMOVAL DATE | EXPOSURE DATE | VOLUME ML | CONDUCT. UMHO/CM | PH LAB | TOTAL H+ GRAN MG/L | SULPHATE MG/L | NITRATE AS N MG/L | CALCIUM MG/L |
|-----------------|------------------|--------------|---------------------|-----------|--------------------------|------------------|-------------------------|-----------------|
| DEC 29,85 | DEC 1,85 | 159.0 | 8.5 | 5.26 | 0.0255 | LG 0.60 | 0.20 | 0.27 |

ONTARIO MINISTRY OF THE ENVIRONMENT
 CUMULATIVE SAMPLING ANALYSIS RESULTS
 APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : MOOSONEE/CUMULATIVE PRECIP.

#39

PAGE : 2

| REMOVAL DATE | EXPOSURE DATE | CHLORIDE MG/L | KJELDAHL AS N MG/L | MAGNESIUM MG/L | POTASSIUM MG/L | SODIUM MG/L | AMMONIUM AS N MG/L | PHOSPHOR MG/L |
|-----------------|------------------|------------------|--------------------------|-------------------|-------------------|----------------|--------------------------|------------------|
| DEC 29,85 | DEC 1,85 | 0.26 | 0.11 | 0.045 | 0.025 | 0.185 | <T 0.005 | 0.010 |

| REMOVAL DATE | EXPOSURE DATE | MANGANESE MG/L | NICKEL MG/L | ZINC MG/L | IRON MG/L | LEAD MG/L | VANADIUM MG/L | ALUMINUM MG/L |
|-----------------|------------------|-------------------|----------------|--------------|--------------|--------------|------------------|------------------|
| DEC 29,85 | DEC 1,85 | 0.001 | 0.0005 | U 0.033 | 0.058 | 0.008 | < 0.0004 | 0.068 |

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : MOOSONEE/CUMULATIVE PRECIP.

#39

PAGE : 3

| REMOVAL DATE | EXPOSURE DATE | COPPER MG/L | CADMIUM MG/L | FREE H+ MG/L |
|-----------------|------------------|----------------|-----------------|-----------------|
| DEC 29,85 | DEC 1,85 | 0.0029 | 0.00076 | 0.0055 |

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : AZURE LAKE/CUMULATIVE PRECIP.

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PAGE : 1

| REMOVAL DATE | EXPOSURE DATE | SAMPLING START HR. | SAMPLING END HR. | SAMPLE TYPE 01-RAIN 02-SNOW 03-COMP/04-OTHER | GAUGE DEPTH(MM) | GAUGE TYPE 02,03-APIOS 09-AES | SAMPLE NUMBER | PROJECT CODE 02-APIOS 03-SPECIAL | SUBPROJECT CODE 01-HOE 03-AES | SAMPLER EFFICI- ENCY (%) | COMMENTS FIELD OFFICE |
|-----------------|------------------|--------------------------|------------------------|--|--------------------|--|------------------|---|--|-----------------------------------|--------------------------|
| JAN 29,85 | JAN 10,85 | 1130 | 830 | 2 | 20.0 | 2 | 35333 | 2 | 1 | 57 | |
| FEB 27,85 | JAN 29,85 | 830 | 1000 | 3 | 68.0 | 2 | 35371 | 2 | 1 | 66 | |
| MAR 27,85 | FEB 27,85 | 1000 | 830 | 3 | 48.0 | 2 | 35378 | 2 | 1 | 52 | |
| APR 24,85 | MAR 27,85 | 830 | 930 | 3 | 109.0 | 2 | 35419 | 2 | 1 | 62 | AC |
| MAY 21,85 | APR 24,85 | 930 | 1230 | 1 | 58.0 | 2 | 35456 | 2 | 1 | 78 | ABC |
| JUN 18,85 | MAY 21,85 | 1230 | 900 | 1 | 70.0 | 2 | 35477 | 2 | 1 | 97 | AC |
| JUL 16,85 | JUN 18,85 | 900 | 830 | 1 | 74.0 | 2 | 35509 | 2 | 1 | 87 | C |
| AUG 15,85 | JUL 16,85 | 830 | 1200 | 1 | 66.0 | 3 | 35538 | 2 | 1 | 97 | C |
| SEP 10,85 | AUG 15,85 | 1200 | 830 | 1 | 50.0 | 3 | 35582 | 2 | 1 | 71 | AC |
| OCT 8,85 | SEP 10,85 | 830 | 930 | 1 | 70.0 | 3 | 35605 | 2 | 1 | 81 | ABC |
| NOV 5,85 | OCT 8,85 | 930 | 1130 | 3 | 55.0 | 3 | 35644 | 2 | 1 | 106 | BCD |
| DEC 3,85 | NOV 5,85 | 1130 | 1215 | 3 | 104.6 | 2 | 35679 | 2 | 1 | 68 | CD |
| JAN 2,86 | DEC 3,85 | 1215 | 1136 | 2 | 44.7 | 2 | 35711 | 2 | 1 | 22 | C |

N

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| REMOVAL DATE | EXPOSURE DATE | VOLUME ML | CONDUCT. UMHO/CM | PH LAB | TOTAL H+ GRAN MG/L | SULPHATE MG/L | NITRATE AS N MG/L | CALCIUM MG/L |
|-----------------|------------------|--------------|---------------------|-----------|--------------------------|------------------|-------------------------|-----------------|
| JAN 29,85 | JAN 10,85 | 371.0 | 16.5 | 4.48 | 0.0504 | 0.80 | 0.34 | 0.04 |
| FEB 27,85 | JAN 29,85 | 1460.0 | 18.7 | 4.42 | 0.0572 | 0.95 | 0.41 | 0.01 |
| MAR 27,85 | FEB 27,85 | 819.0 | 15.6 | 4.66 | 0.0489 | 1.00 | 0.34 | 0.21 |
| APR 24,85 | MAR 27,85 | 2223.0 | 17.6 | 4.61 | 0.0545 | 1.80 | 0.32 | 0.20 |
| MAY 21,85 | APR 24,85 | 1480.0 | 46.6 | 3.99 | 0.1220 | 4.55 | 0.52 | 0.14 |
| JUN 18,85 | MAY 21,85 | 2215.0 | 20.0 | 4.40 | 0.0569 | 2.20 | 0.23 | 0.21 |
| JUL 16,85 | JUN 18,85 | 2113.0 | 19.3 | 4.51 | 0.0577 | 2.15 | 0.25 | 0.20 |
| AUG 15,85 | JUL 16,85 | 2086.0 | 21.6 | 4.47 | 0.0622 | 2.05 | 0.29 | 0.07 |
| SEP 10,85 | AUG 15,85 | 1160.0 | 18.8 | 4.52 | 0.0536 | 2.20 | 0.20 | 0.12 |
| OCT 8,85 | SEP 10,85 | 1844.0 | 34.2 | 4.22 | 0.0854 | 3.20 | 0.50 | 0.23 |
| NOV 5,85 | OCT 8,85 | 1902.0 | 20.9 | 4.35 | 0.0688 | 1.70 | 0.27 | 0.13 |
| DEC 3,85 | NOV 5,85 | 2338.0 | 12.7 | 4.65 | 0.0455 | 0.80 | 0.18 | 0.04 |
| JAN 2,86 | DEC 3,85 | 328.0 | 19.9 | 4.43 | 0.0621 | 0.90 | 0.44 | 0.12 |

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : AZURE LAKE/CUMULATIVE PRECIP.

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PAGE : 2

| REMOVAL DATE | EXPOSURE DATE | CHLORIDE MG/L | KJELDAHL AS N MG/L | MAGNESIM MG/L | POTASSIM MG/L | SODIUM MG/L | AMMONIUM AS N MG/L | PHOSPHOR MG/L |
|-----------------|------------------|------------------|--------------------------|------------------|------------------|----------------|--------------------------|------------------|
| JAN 29,85 | JAN 10,85 | 0.20 | 0.11 | <W 0.005 | <T 0.005 | 0.100 | 0.055 | 0.022 |
| FEB 27,85 | JAN 29,85 | 0.11 | 0.12 | <T 0.005 | 0.035 | <T 0.015 | 0.090 | <T 0.004 |
| MAR 27,85 | FEB 27,85 | 0.13 | 0.16 | <T 0.015 | <T 0.005 | 0.070 | 0.085 | 0.010 |
| APR 24,85 | MAR 27,85 | 0.07 | 0.38 | 0.025 | <T 0.010 | 0.030 | 0.310 | <T 0.005 |
| MAY 21,85 | APR 24,85 | 0.10 | 0.45 | 0.030 | 0.030 | <T 0.015 | 0.360 | <T 0.003 |
| JUN 18,85 | MAY 21,85 | 0.01 | 0.31 | 0.035 | 0.050 | 0.010 | 0.180 | 0.008 |
| JUL 16,85 | JUN 18,85 | 0.09 | 0.43 | 0.030 | 0.045 | 0.025 | 0.280 | 0.014 |
| AUG 15,85 | JUL 16,85 | <T 0.06 | 0.33 | 0.035 | 0.020 | <T 0.020 | 0.225 | 0.012 |
| SEP 10,85 | AUG 15,85 | 0.09 | 0.50 | 0.025 | 0.065 | <T 0.015 | 0.205 | 0.024 |
| OCT 8,85 | SEP 10,85 | 0.09 | 0.35 | 0.030 | 0.045 | <T 0.020 | 0.295 | <T 0.002 |
| NOV 5,85 | OCT 8,85 | <T 0.05 | 0.11 | 0.025 | <T 0.005 | <T 0.005 | 0.080 | <T 0.005 |
| DEC 3,85 | NOV 5,85 | <T 0.03 | 0.13 | <T 0.005 | <T 0.005 | 0.020 | 0.035 | 0.010 |
| JAN 2,86 | DEC 3,85 | 0.23 | <T 0.06 | 0.020 | <W 0.005 | 0.160 | <W 0.005 | 0.006 |

| REMOVAL DATE | EXPOSURE DATE | MANGANESE MG/L | NICKEL MG/L | ZINC MG/L | IRON MG/L | LEAD MG/L | VANADIUM MG/L | ALUMINUM MG/L |
|-----------------|------------------|-------------------|----------------|--------------|--------------|--------------|------------------|------------------|
| JAN 29,85 | JAN 10,85 | 0.001 | 0.0006 | 0.005 | 0.035 | 0.008 | < 0.0004 | 0.030 |
| FEB 27,85 | JAN 29,85 | < 0.001 | 0.0003 | 0.003 | 0.007 | 0.007 | < 0.0004 | 0.021 |
| MAR 27,85 | FEB 27,85 | 0.002 | < 0.0002 | 0.007 | 0.026 | 0.008 | < 0.0004 | 0.042 |
| APR 24,85 | MAR 27,85 | 0.002 | 0.0003 | 0.003 | 0.030 | 0.007 | < 0.0004 | 0.032 |
| MAY 21,85 | APR 24,85 | UG 0.014 | 0.0020 | 0.005 | 0.121 | 0.008 | < 0.0004 | 0.119 |
| JUN 18,85 | MAY 21,85 | 0.004 | 0.0004 | 0.001 | 0.035 | 0.004 | 0.0004 | 0.041 |
| JUL 16,85 | JUN 18,85 | 0.003 | 0.0002 | 0.005 | 0.038 | 0.002 | < 0.0004 | 0.037 |
| AUG 15,85 | JUL 16,85 | 0.003 | 0.0005 | 0.006 | 0.042 | 0.004 | 0.0004 | 0.030 |
| SEP 10,85 | AUG 15,85 | 0.001 | 0.0006 | 0.002 | 0.069 | 0.006 | < 0.0004 | 0.048 |
| OCT 8,85 | SEP 10,85 | 0.002 | 0.0005 | 0.011 | 0.015 | 0.001 | < 0.0004 | 0.021 |
| NOV 5,85 | OCT 8,85 | < 0.001 | 0.0005 | 0.003 | 0.006 | 0.010 | < 0.0004 | 0.011 |
| DEC 3,85 | NOV 5,85 | < 0.001 | 0.0004 | 0.001 | 0.011 | 0.001 | < 0.0004 | 0.012 |
| JAN 2,86 | DEC 3,85 | 0.001 | 0.0004 | 0.005 | 0.038 | 0.004 | < 0.0004 | 0.042 |

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : AZURE LAKE/CUMULATIVE PRECIP.

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PAGE : 3

| REMOVAL DATE | EXPOSURE DATE | COPPER MG/L | CADMIUM MG/L | FREE H+ MG/L |
|-----------------|------------------|----------------|-----------------|-----------------|
| JAN 29,85 | JAN 10,85 | 0.0005 | 0.00004 | 0.0331 |
| FEB 27,85 | JAN 29,85 | < 0.0003 | 0.00005 | 0.0380 |
| MAR 27,85 | FEB 27,85 | 0.0034 | 0.00007 | 0.0219 |
| APR 24,85 | MAR 27,85 | 0.0021 | 0.00006 | 0.0245 |
| MAY 21,85 | APR 24,85 | D 0.0013 | UG 0.00015 | 0.1023 |
| JUN 18,85 | MAY 21,85 | 0.0013 | 0.00006 | 0.0398 |
| JUL 16,85 | JUN 18,85 | 0.0016 | 0.00006 | 0.0309 |
| AUG 15,85 | JUL 16,85 | 0.0007 | 0.00005 | 0.0339 |
| SEP 10,85 | AUG 15,85 | 0.0047 | 0.00005 | 0.0302 |
| OCT 8,85 | SEP 10,85 | 0.0005 | 0.00007 | 0.0603 |
| NOV 5,85 | OCT 8,85 | 0.0010 | 0.00004 | 0.0447 |
| DEC 3,85 | NOV 5,85 | 0.0012 | 0.00006 | 0.0224 |
| JAN 2,86 | DEC 3,85 | 0.0020 | 0.00009 | 0.0372 |

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : BEAR ISLAND/CUMULATIVE PRECIP.

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PAGE : 1

| REMOVAL DATE | EXPOSURE DATE | SAMPLING START HR. | SAMPLING END HR. | SAMPLE TYPE 01-RAIN 02-SNOW 03-COMP/04-OTHER | GAUGE DEPTH(MM) | GAUGE TYPE 02,03-APIOS 09-AES | SAMPLE NUMBER | PROJECT CODE 02-APIOS 03-SPECIAL | SUBPROJECT CODE 01-HOE 03-AES | SAMPLER EFFICI- ENCY (%) | COMMENTS FIELD OFFICE |
|-----------------|------------------|--------------------------|------------------------|--|--------------------|--|------------------|---|--|-----------------------------------|--------------------------|
| JAN 29,85 | JAN 2,85 | 1015 | 1100 | 2 | 18.0 | 2 | 35363 | 2 | 1 | 81 | |
| FEB 26,85 | JAN 29,85 | 1100 | 1145 | 3 | 75.0 | 2 | 35364 | 2 | 1 | 68 | |
| MAR 26,85 | FEB 26,85 | 1145 | 1140 | 3 | 58.0 | 2 | 35399 | 2 | 1 | 50 | |
| APR 24,85 | MAR 26,85 | 1140 | 1921 | 1 | 95.0 | 2 | 35452 | 2 | 1 | U 2 | GQ |
| MAY 21,85 | APR 24,85 | 1921 | 930 | 1 | 27.1 | 9 | 35480 | 2 | 1 | I 177 | BCD |
| JUL 29,85 | JUN 19,85 | 1626 | 1030 | 1 | 90.0 | 2 | 35506 | 2 | 1 | 108 | ABCD |
| AUG 13,85 | JUL 29,85 | 1030 | 1142 | 1 | ***** | * | 35541 | 2 | 1 | *** | E |
| SEP 10,85 | AUG 13,85 | 1142 | 740 | 1 | 66.0 | 9 | 35578 | 2 | 1 | I 31 | ABCD |
| OCT 8,85 | SEP 10,85 | 740 | 1705 | 1 | 29.0 | 3 | 35610 | 2 | 1 | U 112 | GABCD |
| NOV 15,85 | OCT 8,85 | 1705 | 1305 | 3 | 50.0 | 2 | 35651 | 2 | 1 | 119 | |
| DEC 3,85 | NOV 15,85 | 1305 | 1700 | 2 | 107.6 | 2 | 35718 | 2 | 1 | U 49 | FCDG |
| JAN 7,86 | DEC 31,85 | 1700 | 1020 | 2 | 28.8 | 2 | 35717 | 2 | 1 | U 24 | F |

| REMOVAL DATE | EXPOSURE DATE | VOLUME ML | CONDUCT. UMHO/CM | PH LAB | TOTAL H+ GRAM MG/L | SULPHATE MG/L | NITRATE AS N MG/L | CALCIUM MG/L |
|-----------------|------------------|--------------|---------------------|-----------|--------------------------|------------------|-------------------------|-----------------|
| JAN 29,85 | JAN 2,85 | 476.0 | 22.9 | 4.32 | 0.0766 | 0.85 | 0.56 | 0.10 |
| FEB 26,85 | JAN 29,85 | 1675.0 | 21.3 | 4.36 | 0.0674 | 1.25 | 0.40 | <T 0.01 |
| MAR 26,85 | FEB 26,85 | 942.0 | 29.8 | 4.36 | 0.0804 | 2.40 | 0.58 | 0.28 |
| APR 24,85 | MAR 26,85 | 86.0 | ***** | 4.19 | ***** | ***** | ***** | ***** |
| MAY 21,85 | APR 24,85 | 1565.0 | D 22.7 | 4.37 | 0.0585 | D 2.75 | 0.29 | 0.22 |
| JUL 29,85 | JUN 19,85 | 3166.0 | LG 14.2 | UG 5.05 | LG 0.0309 | 2.50 | 0.20 | 0.16 |
| AUG 13,85 | JUL 29,85 | 0.0 | ***** | ***** | ***** | ***** | ***** | ***** |
| SEP 10,85 | AUG 13,85 | 669.0 | 29.3 | 4.38 | 0.0698 | 4.20 | 0.42 | 0.12 |
| OCT 8,85 | SEP 10,85 | 1059.0 | 36.2 | 4.36 | 0.0805 | 5.00 | 0.71 | U 1.10 |
| NOV 15,85 | OCT 8,85 | 1940.0 | 24.5 | 4.35 | 0.0645 | 2.20 | 0.33 | 0.18 |
| DEC 3,85 | NOV 15,85 | 1717.0 | 15.9 | 4.54 | LG 0.0504 | 1.15 | 0.25 | 0.07 |
| JAN 7,86 | DEC 31,85 | 232.0 | 28.8 | 4.31 | 0.0862 | 2.00 | 0.59 | 0.16 |

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : BEAR ISLAND/CUMULATIVE PRECIP.

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PAGE : 2

| REMOVAL DATE | EXPOSURE DATE | CHLORIDE MG/L | KJELDAHL AS N MG/L | MAGNESIUM MG/L | POTASSIUM MG/L | SODIUM MG/L | AMMONIUM AS N MG/L | PHOSPHOR MG/L |
|-----------------|------------------|------------------|--------------------------|-------------------|-------------------|----------------|--------------------------|------------------|
| JAN 29,85 | JAN 2,85 | 0.23 | 0.11 | <T 0.015 | 0.030 | 0.030 | 0.070 | <T 0.004 |
| FEB 26,85 | JAN 29,85 | 0.14 | 0.13 | <T 0.010 | <T 0.030 | 0.050 | 0.110 | <T 0.002 |
| MAR 26,85 | FEB 26,85 | 0.17 | 0.35 | 0.025 | 0.090 | 0.060 | 0.265 | 0.024 |
| APR 24,85 | MAR 26,85 | ***** | ***** | ***** | ***** | ***** | UG 2.800 | ***** |
| MAY 21,85 | APR 24,85 | 0.06 | 0.58 | 0.035 | 0.095 | 0.070 | 0.355 | 0.024 |
| JUL 29,85 | JUN 19,85 | 0.14 | 1.10 | 0.040 | 0.190 | 0.060 | 0.605 | 0.077 |
| AUG 13,85 | JUL 29,85 | ***** | ***** | ***** | ***** | ***** | ***** | ***** |
| SEP 10,85 | AUG 13,85 | 0.11 | 1.26 | 0.060 | 0.155 | 0.070 | 0.755 | D 0.067 |
| OCT 8,85 | SEP 10,85 | 0.20 | 0.58 | UG 0.165 | U 1.380 | 0.080 | 0.155 | D 0.136 |
| NOV 15,85 | OCT 8,85 | <T 0.06 | 0.25 | 0.030 | 0.065 | 0.030 | 0.190 | <T 0.005 |
| DEC 3,85 | NOV 15,85 | 0.18 | 0.10 | <T 0.005 | <T 0.010 | 0.060 | 0.070 | <T 0.004 |
| JAN 7,86 | DEC 31,85 | UG 0.53 | 0.29 | 0.030 | 0.030 | UG 0.390 | 0.190 | UG 0.064 |

| REMOVAL DATE | EXPOSURE DATE | MANGANESE MG/L | NICKEL MG/L | ZINC MG/L | IRON MG/L | LEAD MG/L | VANADIUM MG/L | ALUMINUM MG/L |
|-----------------|------------------|-------------------|----------------|--------------|--------------|--------------|------------------|------------------|
| JAN 29,85 | JAN 2,85 | 0.002 | 0.0012 | 0.010 | 0.103 | 0.021 | < 0.0004 | 0.052 |
| FEB 26,85 | JAN 29,85 | 0.001 | 0.0004 | 0.005 | 0.011 | 0.005 | < 0.0004 | 0.021 |
| MAR 26,85 | FEB 26,85 | 0.002 | 0.0004 | 0.005 | 0.038 | 0.012 | < 0.0004 | 0.050 |
| APR 24,85 | MAR 26,85 | ***** | ***** | ***** | ***** | ***** | ***** | ***** |
| MAY 21,85 | APR 24,85 | 0.004 | 0.0006 | 0.005 | 0.033 | 0.004 | 0.0007 | 0.038 |
| JUL 29,85 | JUN 19,85 | 0.003 | 0.0005 | 0.008 | 0.028 | 0.003 | < 0.0004 | 0.023 |
| AUG 13,85 | JUL 29,85 | ***** | ***** | ***** | ***** | ***** | ***** | ***** |
| SEP 10,85 | AUG 13,85 | 0.006 | 0.0008 | 0.015 | 0.100 | 0.005 | < 0.0004 | D 0.100 |
| OCT 8,85 | SEP 10,85 | U 0.020 | 0.0023 | 0.026 | 0.047 | 0.001 | 0.0004 | 0.043 |
| NOV 15,85 | OCT 8,85 | 0.002 | 0.0008 | 0.004 | 0.017 | 0.009 | < 0.0004 | 0.020 |
| DEC 3,85 | NOV 15,85 | 0.001 | 0.0004 | 0.005 | 0.010 | 0.001 | < 0.0004 | 0.017 |
| JAN 7,86 | DEC 31,85 | 0.003 | 0.0043 | 0.010 | 0.111 | 0.015 | < 0.0004 | 0.112 |

ONTARIO MINISTRY OF THE ENVIRONMENT
 CUMULATIVE SAMPLING ANALYSIS RESULTS
 APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : BEAR ISLAND/CUMULATIVE PRECIP.

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PAGE : 3

| REMOVAL DATE | EXPOSURE DATE | COPPER MG/L | CADMIUM MG/L | FREE H+ MG/L |
|-----------------|------------------|----------------|-----------------|-----------------|
| JAN 29,85 | JAN 2,85 | 0.0029 | 0.00013 | 0.0479 |
| FEB 26,85 | JAN 29,85 | 0.0009 | 0.00011 | 0.0437 |
| MAR 26,85 | FEB 26,85 | 0.0015 | 0.00011 | 0.0437 |
| APR 24,85 | MAR 26,85 | ***** | ***** | 0.0646 |
| MAY 21,85 | APR 24,85 | 0.0023 | 0.00013 | 0.0427 |
| JUL 29,85 | JUN 19,85 | 0.0024 | 0.00011 | LG 0.0089 |
| AUG 13,85 | JUL 29,85 | ***** | ***** | ***** |
| SEP 10,85 | AUG 13,85 | 0.0031 | 0.00015 | 0.0417 |
| OCT 8,85 | SEP 10,85 | 0.0005 | 0.00014 | 0.0437 |
| NOV 15,85 | OCT 8,85 | 0.0017 | 0.00008 | 0.0447 |
| DEC 3,85 | NOV 15,85 | 0.0067 | 0.00018 | 0.0288 |
| JAN 7,86 | DEC 31,85 | UG 0.0258 | 0.00033 | 0.0490 |

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : GOMGANDA/CUMULATIVE PRECIP.

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PAGE 1 2

| REMOVAL DATE | EXPOSURE DATE | CHLORIDE MG/L | KJELDAHL AS N MG/L | MAGNESIUM MG/L | POTASSIUM MG/L | SODIUM MG/L | AMMONIUM AS N MG/L | PHOSPHOR MG/L |
|-----------------|------------------|------------------|--------------------------|-------------------|-------------------|----------------|--------------------------|------------------|
| JAN 29,85 | JAN 2,85 | 0.14 | ***** | <T 0.010 | <T 0.015 | 0.030 | 0.150 | ***** |
| FEB 26,85 | JAN 29,85 | 0.10 | 0.10 | <T 0.005 | 0.035 | <T 0.010 | 0.070 | <T 0.003 |
| MAR 26,85 | FEB 26,85 | 0.08 | 0.30 | <T 0.010 | <T 0.020 | 0.045 | 0.160 | 0.009 |
| APR 23,85 | MAR 26,85 | 0.07 | 0.32 | 0.020 | 0.020 | 0.035 | 0.255 | <T 0.005 |
| MAY 21,85 | APR 23,85 | 0.08 | 0.26 | 0.020 | 0.025 | <T 0.020 | 0.170 | 0.008 |
| JUN 18,85 | MAY 21,85 | D 0.04 | 0.49 | 0.055 | 0.080 | 0.015 | 0.260 | 0.013 |
| JUL 16,85 | JUN 18,85 | <T 0.05 | 0.17 | <T 0.005 | 0.025 | <T 0.015 | 0.105 | 0.008 |
| AUG 13,85 | JUL 16,85 | B 0.75 | 0.60 | 0.030 | D 0.180 | B 0.725 | <T 0.010 | D 0.047 |
| SEP 10,85 | AUG 13,85 | <T 0.05 | 0.28 | 0.015 | 0.020 | <T 0.015 | 0.230 | <T 0.002 |
| OCT 8,85 | SEP 10,85 | 0.08 | 0.38 | 0.030 | 0.025 | <T 0.010 | 0.335 | <T 0.002 |
| NOV 5,85 | OCT 8,85 | <T 0.05 | 0.32 | 0.030 | D 0.070 | <T 0.005 | 0.125 | B 0.037 |
| DEC 3,85 | NOV 5,85 | 0.11 | 0.07 | <W 0.005 | 0.025 | 0.075 | <W 0.005 | 0.008 |
| DEC 31,85 | DEC 3,85 | 0.28 | 0.16 | 0.015 | <W 0.005 | 0.185 | <T 0.005 | B 0.030 |

| REMOVAL DATE | EXPOSURE DATE | MANGANESE MG/L | NICKEL MG/L | ZINC MG/L | IRON MG/L | LEAD MG/L | VANADIUM MG/L | ALUMINUM MG/L |
|-----------------|------------------|-------------------|----------------|--------------|--------------|--------------|------------------|------------------|
| JAN 29,85 | JAN 2,85 | ***** | ***** | ***** | ***** | ***** | ***** | ***** |
| FEB 26,85 | JAN 29,85 | < 0.001 | 0.0003 | < 0.004 | 0.009 | 0.010 | < 0.0004 | 0.024 |
| MAR 26,85 | FEB 26,85 | 0.002 | < 0.0002 | 0.003 | 0.033 | 0.006 | < 0.0004 | 0.054 |
| APR 23,85 | MAR 26,85 | 0.002 | < 0.0002 | 0.002 | 0.026 | 0.004 | < 0.0004 | 0.030 |
| MAY 21,85 | APR 23,85 | 0.002 | < 0.0002 | 0.002 | 0.023 | 0.007 | < 0.0004 | 0.030 |
| JUN 18,85 | MAY 21,85 | D 0.009 | 0.0045 | 0.003 | 0.052 | 0.007 | 0.0004 | 0.070 |
| JUL 16,85 | JUN 18,85 | 0.002 | < 0.0002 | 0.003 | 0.012 | 0.002 | D 0.0005 | 0.018 |
| AUG 13,85 | JUL 16,85 | 0.003 | 0.0008 | 0.011 | 0.044 | 0.004 | 0.0004 | 0.032 |
| SEP 10,85 | AUG 13,85 | < 0.001 | 0.0005 | 0.002 | 0.013 | 0.006 | < 0.0004 | 0.029 |
| OCT 8,85 | SEP 10,85 | 0.002 | 0.0003 | 0.003 | 0.018 | 0.001 | < 0.0004 | 0.019 |
| NOV 5,85 | OCT 8,85 | < 0.001 | 0.0006 | 0.009 | 0.006 | 0.005 | < 0.0004 | 0.009 |
| DEC 3,85 | NOV 5,85 | < 0.001 | 0.0003 | 0.001 | 0.010 | 0.001 | < 0.0004 | 0.021 |
| DEC 31,85 | DEC 3,85 | 0.002 | 0.0011 | 0.007 | 0.036 | 0.005 | < 0.0004 | 0.066 |

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : GOMGANDA/CUMULATIVE PRECIP.

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PAGE : 1

| REMOVAL DATE | EXPOSURE DATE | SAMPLING START HR. | SAMPLING END HR. | SAMPLE TYPE 01-RAIN 02-SNOW 03-COMP/04-OTHER | GAUGE DEPTH(MM) | GAUGE TYPE 02,03-APIOS 09-AES | SAMPLE NUMBER | PROJECT CODE 02-APIOS 03-SPECIAL | SUBPROJECT CODE 01-MOE 03-AES | SAMPLER EFFICI- ENCY (%) | COMMENTS FIELD OFFICE |
|-----------------|------------------|--------------------------|------------------------|--|--------------------|--|------------------|---|--|-----------------------------------|--------------------------|
| JAN 29,85 | JAN 2,85 | 1137 | 1045 | 2 | 19.0 | 2 | 35337 | 2 | 1 | 20 | N |
| FEB 26,85 | JAN 29,85 | 1045 | 1010 | 3 | 66.0 | 2 | 35362 | 2 | 1 | 51 | |
| MAR 26,85 | FEB 26,85 | 1010 | 1630 | 3 | 35.0 | 2 | 35461 | 2 | 1 | 56 | C |
| APR 23,85 | MAR 26,85 | 1630 | 800 | 3 | 86.0 | 2 | 35460 | 2 | 1 | 66 | C |
| MAY 21,85 | APR 23,85 | 800 | 1210 | 1 | 41.1 | 9 | 35462 | 2 | 1 | I 121 | ABC |
| JUN 18,85 | MAY 21,85 | 1210 | 1515 | 1 | 52.0 | 2 | 35471 | 2 | 1 | 98 | CD |
| JUL 16,85 | JUN 18,85 | 1515 | 910 | 1 | 81.0 | 3 | 35514 | 2 | 1 | U 49 | GCD C |
| AUG 13,85 | JUL 16,85 | 910 | 945 | 1 | 74.0 | 3 | 35545 | 2 | 1 | U 37 | GCD |
| SEP 10,85 | AUG 13,85 | 945 | 1000 | 1 | 41.0 | 3 | 35573 | 2 | 1 | 93 | C |
| OCT 8,85 | SEP 10,85 | 1000 | 955 | 1 | 47.0 | 3 | 35611 | 2 | 1 | 96 | ABCD |
| NOV 5,85 | OCT 8,85 | 955 | 1015 | 3 | 64.1 | 9 | 35648 | 2 | 1 | I 87 | CD |
| DEC 3,85 | NOV 5,85 | 1015 | 1610 | 2 | 70.7 | 2 | 35682 | 2 | 1 | 60 | C |
| DEC 31,85 | DEC 3,85 | 1610 | 805 | 2 | 18.4 | 2 | 35706 | 2 | 1 | 34 | N |

| REMOVAL DATE | EXPOSURE DATE | VOLUME ML | CONDUCT. UMHO/CM | PH LAB | TOTAL H+ GRAN MG/L | SULPHATE MG/L | NITRATE AS N MG/L | CALCIUM MG/L |
|-----------------|------------------|--------------|---------------------|-----------|--------------------------|------------------|-------------------------|-----------------|
| JAN 29,85 | JAN 2,85 | 125.0 | 22.4 | 4.34 | 0.0792 | 1.75 | 0.44 | 0.07 |
| FEB 26,85 | JAN 29,85 | 1100.0 | 15.6 | 4.48 | 0.0533 | 0.85 | 0.32 | 0.10 |
| MAR 26,85 | FEB 26,85 | 643.0 | 20.5 | 4.34 | 0.0646 | 1.50 | 0.44 | 0.09 |
| APR 23,85 | MAR 26,85 | 1852.0 | 19.6 | 4.41 | 0.0600 | 2.05 | 0.31 | 0.14 |
| MAY 21,85 | APR 23,85 | 1623.0 | 32.5 | 4.13 | 0.0931 | 3.55 | D 0.28 | 0.08 |
| JUN 18,85 | MAY 21,85 | 1665.0 | D 35.7 | 4.16 | 0.0948 | 4.00 | 0.41 | D 0.40 |
| JUL 16,85 | JUN 18,85 | 1305.0 | LG 6.6 | 5.09 | 0.0258 | LG 0.60 | LG 0.06 | <T 0.03 |
| AUG 13,85 | JUL 16,85 | 896.0 | 10.6 | 5.09 | 0.0287 | 1.45 | <T 0.04 | 0.10 |
| SEP 10,85 | AUG 13,85 | 1251.0 | 29.0 | 4.26 | 0.0730 | 2.85 | 0.26 | 0.06 |
| OCT 8,85 | SEP 10,85 | 1480.0 | 40.3 | 4.13 | 0.1060 | 3.95 | 0.46 | 0.24 |
| NOV 5,85 | OCT 8,85 | 1827.0 | 15.0 | 4.56 | 0.0510 | 1.35 | 0.19 | 0.06 |
| DEC 3,85 | NOV 5,85 | 1388.0 | 9.3 | 4.68 | 0.0481 | 0.85 | LG 0.13 | <T 0.03 |
| DEC 31,85 | DEC 3,85 | 204.0 | 22.9 | 4.33 | 0.0706 | 1.20 | 0.46 | 0.12 |

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ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : GOMGANDA/CUMULATIVE PRECIP.

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| REMOVAL DATE | EXPOSURE DATE | COPPER MG/L | CADMIUM MG/L | FREE H+ MG/L |
|-----------------|------------------|----------------|-----------------|-----------------|
| JAN 29,85 | JAN 2,85 | ***** | ***** | 0.0457 |
| FEB 26,85 | JAN 29,85 | 0.0004 | 0.00013 | 0.0331 |
| MAR 26,85 | FEB 26,85 | 0.0069 | < 0.00002 | 0.0457 |
| APR 23,85 | MAR 26,85 | < 0.0003 | < 0.00002 | 0.0389 |
| MAY 21,85 | APR 23,85 | 0.0005 | < 0.00002 | 0.0741 |
| JUN 18,85 | MAY 21,85 | 0.0012 | UG 0.00011 | 0.0692 |
| JUL 16,85 | JUN 18,85 | < 0.0004 | 0.00002 | 0.0081 |
| AUG 13,85 | JUL 16,85 | 0.0013 | UG 0.00053 | 0.0081 |
| SEP 10,85 | AUG 13,85 | 0.0027 | 0.00009 | 0.0550 |
| OCT 8,85 | SEP 10,85 | 0.0003 | 0.00010 | 0.0741 |
| NOV 5,85 | OCT 8,85 | 0.0008 | 0.00003 | 0.0275 |
| DEC 3,85 | NOV 5,85 | 0.0008 | 0.00010 | 0.0209 |
| DEC 31,85 | DEC 3,85 | 0.0046 | 0.00015 | 0.0468 |

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : KILLARNEY/CUMULATIVE PRECIP.

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PAGE : 1

| REMOVAL DATE | EXPOSURE DATE | SAMPLING START HR. | SAMPLING END HR. | SAMPLE TYPE 01-RAIN 02-SNOW 03-COMP/04-OTHER | GAUGE DEPTH(MM) | GAUGE TYPE 02,03-APIOS 09-AES | SAMPLE NUMBER | PROJECT CODE 02-APIOS 03-SPECIAL | SUBPROJECT CODE 01-MOE 03-AES | SAMPLER EFFICI- ENCY (%) | COMMENTS FIELD OFFICE |
|-----------------|------------------|--------------------------|------------------------|--|--------------------|--|------------------|---|--|-----------------------------------|--------------------------|
| JAN 29,85 | JAN 2,85 | 1000 | 1200 | 2 | 35.0 | 2 | 35331 | 2 | 1 | 55 | |
| FEB 28,85 | JAN 29,85 | 1200 | 1400 | 3 | 99.0 | 2 | 35365 | 2 | 1 | 66 | |
| MAR 28,85 | FEB 28,85 | 1400 | 1300 | 3 | 97.0 | 2 | 35380 | 2 | 1 | 65 | |
| APR 25,85 | MAR 28,85 | 1300 | 1100 | 3 | 106.1 | 9 | 35420 | 2 | 1 | I 95 | BCD |
| MAY 21,85 | APR 25,85 | 1100 | 930 | 1 | 66.0 | 2 | 35457 | 2 | 1 | 79 | CD |
| JUN 18,85 | MAY 21,85 | 930 | 830 | 1 | 20.0 | 2 | 35479 | 2 | 1 | 121 | C |
| JUL 17,85 | JUN 18,85 | 930 | 830 | 1 | 15.0 | 2 | 35507 | 2 | 1 | 110 | C |
| AUG 13,85 | JUL 17,85 | 830 | 915 | 1 | 85.0 | 3 | 35540 | 2 | 1 | 87 | C |
| SEP 10,85 | AUG 13,85 | 915 | 945 | 1 | 110.0 | 3 | 35579 | 2 | 1 | U 10 | DG |
| OCT 8,85 | SEP 10,85 | 945 | 1330 | 1 | 45.0 | 3 | 35609 | 2 | 1 | 104 | ABC |
| NOV 15,85 | OCT 8,85 | 1330 | 1430 | 3 | 73.2 | 9 | 35654 | 2 | 1 | U 101 | CG |
| DEC 3,85 | NOV 15,85 | 1430 | 1025 | 2 | ***** | * | 35688 | 2 | 1 | *** | GE |
| DEC 30,85 | DEC 3,85 | 1025 | 850 | 2 | 28.1 | 2 | 35716 | 2 | 1 | 76 | C |

| REMOVAL DATE | EXPOSURE DATE | VOLUME ML | CONDUCT. UMHO/CM | PH LAB | TOTAL H+ GRAN MG/L | SULPHATE MG/L | NITRATE AS N MG/L | CALCIUM MG/L |
|-----------------|------------------|--------------|---------------------|-----------|--------------------------|------------------|-------------------------|-----------------|
| JAN 29,85 | JAN 2,85 | 632.0 | 22.1 | 4.36 | 0.0670 | 1.05 | 0.50 | 0.11 |
| FEB 28,85 | JAN 29,85 | 2125.0 | 27.3 | 4.25 | 0.0810 | 1.70 | 0.53 | 0.03 |
| MAR 28,85 | FEB 28,85 | 2077.0 | 24.1 | 4.40 | 0.0755 | 2.55 | 0.56 | 0.27 |
| APR 25,85 | MAR 28,85 | 3302.0 | 36.4 | 4.24 | 0.0944 | 3.50 | 0.64 | 0.30 |
| MAY 21,85 | APR 25,85 | 1714.0 | 33.9 | 4.21 | 0.0818 | 3.65 | 0.59 | 0.37 |
| JUN 18,85 | MAY 21,85 | 791.0 | 27.3 | 4.41 | 0.0605 | 3.65 | 0.53 | 0.70 |
| JUL 17,85 | JUN 18,85 | 538.0 | 51.3 | 4.45 | 0.0709 | 4.05 | 0.57 | 0.48 |
| AUG 13,85 | JUL 17,85 | 2420.0 | 26.3 | 4.37 | 0.0705 | 2.75 | 0.31 | 0.06 |
| SEP 10,85 | AUG 13,85 | 374.0 | 35.2 | 4.16 | 0.0936 | 3.30 | 0.53 | 0.06 |
| OCT 8,85 | SEP 10,85 | 1524.0 | 56.8 | 4.00 | UG 0.1360 | 5.05 | 0.99 | 0.47 |
| NOV 15,85 | OCT 8,85 | 2421.0 | 27.8 | 4.30 | 0.0761 | 2.10 | 0.51 | 0.24 |
| DEC 3,85 | NOV 15,85 | ***** | ***** | ***** | ***** | ***** | ***** | ***** |
| DEC 30,85 | DEC 3,85 | 701.0 | 26.6 | 4.32 | 0.0749 | 1.55 | 0.60 | 0.12 |

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : KILLARNEY/CUMULATIVE PRECIP.

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PAGE : 2

| REMOVAL DATE | EXPOSURE DATE | CHLORIDE MG/L | KJELDAHL AS N MG/L | MAGNESIUM MG/L | POTASSIUM MG/L | SODIUM MG/L | AMMONIUM AS N MG/L | PHOSPHOR MG/L |
|-----------------|------------------|------------------|--------------------------|-------------------|-------------------|----------------|--------------------------|------------------|
| JAN 29,85 | JAN 2,85 | 0.31 | 0.16 | <T 0.010 | <T 0.020 | 0.170 | 0.085 | 0.026 |
| FEB 28,85 | JAN 29,85 | 0.19 | 0.21 | <T 0.015 | 0.035 | 0.055 | 0.140 | <T 0.005 |
| MAR 28,85 | FEB 28,85 | 0.14 | 0.63 | 0.025 | <T 0.020 | 0.050 | 0.360 | 0.012 |
| APR 25,85 | MAR 28,85 | 0.15 | 0.56 | 0.050 | 0.025 | 0.060 | 0.490 | <T 0.006 |
| MAY 21,85 | APR 25,85 | 0.10 | 0.60 | 0.065 | 0.030 | 0.040 | 0.525 | <T 0.005 |
| JUN 18,85 | MAY 21,85 | 0.08 | 0.68 | 0.135 | 0.070 | 0.080 | 0.410 | 0.031 |
| JUL 17,85 | JUN 18,85 | 0.19 | 0.86 | 0.095 | 0.160 | 0.085 | 0.600 | 0.020 |
| AUG 13,85 | JUL 17,85 | <T 0.06 | 0.35 | 0.025 | 0.020 | 0.020 | 0.290 | 0.008 |
| SEP 10,85 | AUG 13,85 | 0.11 | 0.39 | 0.040 | 0.025 | 0.035 | 0.320 | <T 0.002 |
| OCT 8,85 | SEP 10,85 | 0.20 | 0.58 | 0.065 | 0.080 | 0.030 | 0.535 | <T 0.004 |
| NOV 15,85 | OCT 8,85 | 0.14 | 0.30 | 0.035 | 0.060 | 0.085 | 0.235 | <T 0.003 |
| DEC 3,85 | NOV 15,85 | ***** | ***** | ***** | ***** | ***** | ***** | ***** |
| DEC 30,85 | DEC 3,85 | 0.27 | 0.22 | 0.025 | 0.035 | 0.130 | 0.125 | <T 0.005 |

| REMOVAL DATE | EXPOSURE DATE | MANGANESE MG/L | NICKEL MG/L | ZINC MG/L | IRON MG/L | LEAD MG/L | VANADIUM MG/L | ALUMINUM MG/L |
|-----------------|------------------|-------------------|----------------|--------------|--------------|--------------|------------------|------------------|
| JAN 29,85 | JAN 2,85 | 0.002 | 0.0027 | 0.010 | 0.028 | 0.008 | < 0.0004 | 0.038 |
| FEB 28,85 | JAN 29,85 | 0.001 | 0.0005 | 0.008 | 0.016 | 0.009 | < 0.0004 | 0.020 |
| MAR 28,85 | FEB 28,85 | 0.003 | < 0.0002 | 0.017 | 0.033 | 0.012 | < 0.0004 | 0.038 |
| APR 25,85 | MAR 28,85 | 0.003 | 0.0004 | 0.005 | 0.043 | 0.011 | < 0.0004 | 0.037 |
| MAY 21,85 | APR 25,85 | 0.002 | 0.0004 | 0.004 | 0.048 | 0.009 | < 0.0004 | 0.055 |
| JUN 18,85 | MAY 21,85 | UG 0.024 | 0.0004 | 0.005 | UG 0.271 | 0.009 | 0.0010 | UG 0.248 |
| JUL 17,85 | JUN 18,85 | 0.010 | 0.0008 | 0.011 | 0.135 | 0.010 | 0.0005 | 0.121 |
| AUG 13,85 | JUL 17,85 | 0.002 | 0.0003 | 0.009 | 0.028 | 0.003 | 0.0004 | 0.010 |
| SEP 10,85 | AUG 13,85 | 0.002 | 0.0002 | 0.005 | 0.015 | 0.004 | < 0.0004 | 0.040 |
| OCT 8,85 | SEP 10,85 | 0.004 | 0.0003 | 0.010 | 0.052 | 0.005 | 0.0004 | 0.036 |
| NOV 15,85 | OCT 8,85 | < 0.001 | 0.0007 | 0.001 | 0.020 | 0.007 | < 0.0004 | 0.014 |
| DEC 3,85 | NOV 15,85 | ***** | ***** | ***** | ***** | ***** | ***** | ***** |
| DEC 30,85 | DEC 3,85 | 0.001 | 0.0009 | 0.007 | 0.064 | 0.005 | < 0.0004 | 0.027 |

ONTARIO MINISTRY OF THE ENVIRONMENT
 CUMULATIVE SAMPLING ANALYSIS RESULTS
 APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : KILLARNEY/CUMULATIVE PRECIP.

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PAGE : 3

| REMOVAL DATE | EXPOSURE DATE | COPPER MG/L | CADMIUM MG/L | FREE H+ MG/L |
|-----------------|------------------|----------------|-----------------|-----------------|
| JAN 29,85 | JAN 2,85 | UG 0.0153 | 0.00050 | 0.0437 |
| FEB 28,85 | JAN 29,85 | 0.0009 | 0.00009 | 0.0562 |
| MAR 28,85 | FEB 28,85 | 0.0017 | 0.00009 | 0.0398 |
| APR 25,85 | MAR 28,85 | 0.0011 | 0.00008 | 0.0575 |
| MAY 21,85 | APR 25,85 | 0.0003 | 0.00028 | 0.0617 |
| JUN 18,85 | MAY 21,85 | 0.0018 | 0.00008 | 0.0389 |
| JUL 17,85 | JUN 18,85 | 0.0027 | 0.00030 | 0.0355 |
| AUG 13,85 | JUL 17,85 | 0.0004 | 0.00007 | 0.0427 |
| SEP 10,85 | AUG 13,85 | 0.0011 | 0.00010 | 0.0692 |
| OCT 8,85 | SEP 10,85 | 0.0005 | 0.00012 | 0.1000 |
| NOV 15,85 | OCT 8,85 | 0.0012 | 0.00008 | 0.0501 |
| DEC 3,85 | NOV 15,85 | ***** | ***** | ***** |
| DEC 30,85 | DEC 3,85 | 0.0034 | 0.00010 | 0.0479 |

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : MATTAWA/CUMULATIVE PRECIP.

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PAGE : 1

| REMOVAL DATE | EXPOSURE DATE | SAMPLING START HR. | SAMPLING END HR. | SAMPLE TYPE 01-RAIN 02-SNOW 03-COMP/04-OTHER | GAUGE DEPTH(MM) | GAUGE TYPE 02,03-APIOS 09-AES | SAMPLE NUMBER | PROJECT CODE 02-APIOS 03-SPECIAL | SUBPROJECT CODE 01-MOE 03-AES | SAMPLER EFFICI- ENCY (%) | COMMENTS FIELD OFFICE |
|-----------------|------------------|--------------------------|------------------------|--|--------------------|--|------------------|---|--|-----------------------------------|--------------------------|
| JAN 29,85 | JAN 2,85 | 1430 | 1600 | 2 | 24.0 | 2 | 35330 | 2 | 1 | 82 | |
| MAR 4,85 | JAN 29,85 | 1600 | 1500 | 3 | 97.0 | 2 | 35360 | 2 | 1 | 69 | |
| MAR 26,85 | MAR 4,85 | 1500 | 1430 | 3 | 70.0 | 2 | 35400 | 2 | 1 | 61 | |
| APR 24,85 | MAR 26,85 | 1430 | 730 | 3 | 104.8 | 9 | 35424 | 2 | 1 | I 88 | CD |
| MAY 21,85 | APR 24,85 | 730 | 1730 | 1 | 56.0 | 2 | 35454 | 2 | 1 | 79 | CD |
| JUN 19,85 | MAY 21,85 | 1730 | 1745 | 1 | 66.0 | 2 | 35503 | 2 | 1 | 58 | AC H |
| JUL 25,85 | JUN 19,85 | 1745 | 1210 | 1 | 150.0 | 2 | 35504 | 2 | 1 | U 44 | DCI |
| AUG 13,85 | JUL 25,85 | 1210 | 1150 | 1 | 133.0 | 3 | 35543 | 2 | 1 | U 60 | CDJ |
| SEP 10,85 | AUG 13,85 | 1150 | 1100 | 1 | 58.0 | 3 | 35576 | 2 | 1 | 93 | CDA |
| OCT 8,85 | SEP 10,85 | 1100 | 1430 | 3 | 51.1 | 9 | 35617 | 2 | 1 | I 150 | CD |
| NOV 5,85 | OCT 8,85 | 1430 | 1600 | 3 | 48.0 | 2 | 35642 | 2 | 1 | 85 | CDB C |
| DEC 3,85 | NOV 5,85 | 1600 | 1310 | 2 | 81.2 | 3 | 35728 | 2 | 1 | 61 | CD |

| REMOVAL DATE | EXPOSURE DATE | VOLUME ML | CONDUCT. UMHO/CM | PH LAB | TOTAL H+ GRAN MG/L | SULPHATE MG/L | NITRATE AS N MG/L | CALCIUM MG/L |
|-----------------|------------------|--------------|---------------------|-----------|--------------------------|------------------|-------------------------|-----------------|
| JAN 29,85 | JAN 2,85 | 642.0 | 24.5 | 4.36 | 0.0682 | 0.95 | 0.63 | 0.10 |
| MAR 4,85 | JAN 29,85 | 2193.0 | 21.8 | 4.39 | 0.0703 | 1.35 | 0.46 | 0.12 |
| MAR 26,85 | MAR 4,85 | 1408.0 | 19.1 | 4.54 | 0.0561 | 1.35 | 0.39 | 0.25 |
| APR 24,85 | MAR 26,85 | 2995.0 | 43.3 | 4.18 | UG 0.1040 | 4.50 | 0.81 | 0.48 |
| MAY 21,85 | APR 24,85 | 1450.0 | 34.1 | 4.19 | 0.0842 | 3.70 | 0.53 | 0.18 |
| JUN 19,85 | MAY 21,85 | 1251.0 | LG 15.0 | UG 4.84 | 0.0471 | 2.50 | 0.25 | 0.24 |
| JUL 25,85 | JUN 19,85 | 2182.0 | LG 15.7 | 4.58 | 0.0519 | 1.95 | 0.19 | 0.24 |
| AUG 13,85 | JUL 25,85 | 2607.0 | 38.1 | 4.26 | 0.0939 | 5.35 | 0.45 | 0.55 |
| SEP 10,85 | AUG 13,85 | 1762.0 | 19.5 | 4.42 | 0.0557 | 2.00 | 0.18 | 0.05 |
| OCT 8,85 | SEP 10,85 | 2497.0 | 30.7 | 4.22 | 0.0872 | D 2.80 | 0.42 | 0.29 |
| NOV 5,85 | OCT 8,85 | 1329.0 | U 8.6 | U 6.70 | LG 0.0290 | 1.60 | LG 0.06 | 0.65 |
| DEC 3,85 | NOV 5,85 | 1634.0 | 31.9 | 4.25 | 0.0861 | 2.60 | 0.62 | 0.19 |

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : MATTAWA/CUMULATIVE PRECIP.

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PAGE : 2

| REMOVAL DATE | EXPOSURE DATE | CHLORIDE MG/L | KJELDAHL AS N MG/L | MAGNESIUM MG/L | POTASSIUM MG/L | SODIUM MG/L | AMMONIUM AS N MG/L | PHOSPHOR MG/L |
|-----------------|------------------|------------------|--------------------------|-------------------|-------------------|----------------|--------------------------|------------------|
| JAN 29,85 | JAN 2,85 | 0.17 | 0.19 | <T 0.005 | <T 0.005 | 0.070 | 0.140 | 0.006 |
| MAR 4,85 | JAN 29,85 | 0.12 | 0.18 | <T 0.015 | <T 0.020 | 0.025 | 0.155 | <T 0.004 |
| MAR 26,85 | MAR 4,85 | 0.12 | 0.19 | <T 0.015 | <T 0.010 | 0.045 | 0.115 | 0.008 |
| APR 24,85 | MAR 26,85 | 0.21 | 0.80 | 0.070 | 0.035 | 0.085 | 0.675 | <T 0.004 |
| MAY 21,85 | APR 24,85 | 0.12 | 0.63 | 0.040 | 0.055 | <T 0.020 | 0.560 | <T 0.003 |
| JUN 19,85 | MAY 21,85 | 0.19 | 1.02 | 0.050 | 0.180 | 0.050 | 0.630 | 0.075 |
| JUL 25,85 | JUN 19,85 | 0.10 | 0.30 | 0.040 | 0.040 | 0.030 | 0.630 | 0.006 |
| AUG 13,85 | JUL 25,85 | 0.31 | 1.24 | 0.135 | 0.110 | 0.045 | 0.610 | 0.162 |
| SEP 10,85 | AUG 13,85 | <T 0.05 | 0.18 | 0.020 | 0.025 | 0.020 | 0.130 | <T 0.005 |
| OCT 8,85 | SEP 10,85 | 0.08 | 0.25 | 0.035 | <T 0.015 | 0.025 | 0.210 | 0.007 |
| NOV 5,85 | OCT 8,85 | 0.17 | 0.15 | UG 0.245 | 0.185 | 0.020 | <W 0.005 | 0.017 |
| DEC 3,85 | NOV 5,85 | 0.22 | 0.25 | 0.035 | 0.050 | 0.140 | 0.170 | 0.019 |

| REMOVAL DATE | EXPOSURE DATE | MANGANESE MG/L | NICKEL MG/L | ZINC MG/L | IRON MG/L | LEAD MG/L | VANADIUM MG/L | ALUMINUM MG/L |
|-----------------|------------------|-------------------|----------------|--------------|--------------|--------------|------------------|------------------|
| JAN 29,85 | JAN 2,85 | 0.003 | 0.0032 | 0.006 | 0.057 | 0.010 | < 0.0004 | 0.035 |
| MAR 4,85 | JAN 29,85 | 0.002 | 0.0004 | 0.007 | 0.025 | 0.007 | < 0.0004 | 0.023 |
| MAR 26,85 | MAR 4,85 | 0.002 | < 0.0002 | 0.004 | 0.036 | 0.011 | < 0.0004 | 0.036 |
| APR 24,85 | MAR 26,85 | 0.006 | 0.0003 | 0.011 | 0.071 | 0.012 | < 0.0004 | 0.059 |
| MAY 21,85 | APR 24,85 | 0.004 | < 0.0002 | 0.005 | 0.045 | 0.009 | < 0.0004 | 0.042 |
| JUN 19,85 | MAY 21,85 | 0.004 | 0.0015 | 0.019 | 0.036 | 0.001 | < 0.0004 | 0.045 |
| JUL 25,85 | JUN 19,85 | 0.006 | 0.0003 | 0.009 | 0.086 | 0.001 | < 0.0004 | 0.079 |
| AUG 13,85 | JUL 25,85 | UG 0.021 | 0.0008 | 0.007 | UG 0.265 | 0.005 | 0.0005 | UG 0.172 |
| SEP 10,85 | AUG 13,85 | 0.002 | 0.0007 | 0.004 | 0.044 | < 0.002 | < 0.0004 | 0.043 |
| OCT 8,85 | SEP 10,85 | 0.002 | 0.0007 | 0.004 | 0.024 | 0.004 | < 0.0004 | 0.020 |
| NOV 5,85 | OCT 8,85 | UG 0.022 | 0.0011 | 0.006 | 0.013 | 0.013 | < 0.0004 | 0.017 |
| DEC 3,85 | NOV 5,85 | 0.006 | 0.0023 | 0.020 | 0.188 | 0.007 | < 0.0004 | 0.131 |

ONTARIO MINISTRY OF THE ENVIRONMENT
 CUMULATIVE SAMPLING ANALYSIS RESULTS
 APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : MATTAWA/CUMULATIVE PRECIP.

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PAGE : 3

| REMOVAL DATE | EXPOSURE DATE | COPPER MG/L | CADMIUM MG/L | FREE H+ MG/L |
|-----------------|------------------|----------------|-----------------|-----------------|
| JAN 29,85 | JAN 2,85 | 0.0016 | 0.00006 | 0.0437 |
| MAR 4,85 | JAN 29,85 | 0.0023 | 0.00006 | 0.0407 |
| MAR 26,85 | MAR 4,85 | 0.0009 | 0.00007 | 0.0288 |
| APR 24,85 | MAR 26,85 | 0.0014 | 0.00011 | 0.0661 |
| MAY 21,85 | APR 24,85 | 0.0008 | 0.00009 | 0.0646 |
| JUN 19,85 | MAY 21,85 | 0.0014 | 0.00010 | LG 0.0145 |
| JUL 25,85 | JUN 19,85 | 0.0016 | 0.00007 | 0.0263 |
| AUG 13,85 | JUL 25,85 | 0.0004 | 0.00014 | 0.0550 |
| SEP 10,85 | AUG 13,85 | 0.0006 | 0.00007 | 0.0380 |
| OCT 8,85 | SEP 10,85 | D 0.0010 | 0.00004 | 0.0603 |
| NOV 5,85 | OCT 8,85 | 0.0024 | 0.00002 | U 0.0002 |
| DEC 3,85 | NOV 5,85 | 0.0059 | 0.00016 | 0.0562 |

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : MCKELLAR/CUMULATIVE PRECIP.

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| REMOVAL DATE | EXPOSURE DATE | SAMPLING START HR. | END HR. | SAMPLE TYPE 01-RAIN 02-SNOW 03-COMP/04-OTHER | GAUGE DEPTH(MM) | GAUGE TYPE 02,03-APIOS 09-AES | SAMPLE NUMBER | PROJECT CODE 02-APIOS 03-SPECIAL | SUBPROJECT CODE 01-MOE 03-AES | SAMPLER EFFICI- ENCY (%) | COMMENTS FIELD OFFICE |
|-----------------|------------------|--------------------------|------------|--|--------------------|--|------------------|---|--|-----------------------------------|--------------------------|
| JAN 29,85 | JAN 2,85 | 840 | 830 | 2 | 73.0 | 2 | 35344 | 2 | 1 | 59 | |
| FEB 26,85 | JAN 29,85 | 840 | 815 | 3 | 96.0 | 2 | 35366 | 2 | 1 | 81 | C |
| MAR 26,85 | FEB 26,85 | 815 | 830 | 3 | 42.0 | 2 | 35382 | 2 | 1 | 162 | N |
| APR 23,85 | MAR 26,85 | 830 | 800 | 3 | 126.9 | 9 | 35423 | 2 | 1 | I 87 | BCD |
| MAY 21,85 | APR 23,85 | 800 | 830 | 1 | 69.1 | 9 | 35459 | 2 | 1 | I 72 | CD |
| JUN 18,85 | MAY 21,85 | 830 | 815 | 1 | 55.0 | 2 | 35478 | 2 | 1 | 40 | C |
| JUL 22,85 | JUN 18,85 | 820 | 820 | 1 | 78.0 | 2 | 35508 | 2 | 1 | 103 | CD |
| AUG 13,85 | JUL 22,85 | 820 | 815 | 1 | 89.0 | 3 | 35539 | 2 | 1 | 94 | C |
| SEP 10,85 | AUG 13,85 | 815 | 825 | 1 | 97.7 | 9 | 35581 | 2 | 1 | I 97 | C |
| NOV 5,85 | SEP 10,85 | 825 | 830 | 3 | 91.5 | 3 | 35618 | 2 | 1 | 159 | CD |
| DEC 3,85 | NOV 5,85 | 830 | 820 | 1 | 115.6 | 2 | 35677 | 2 | 1 | U 54 | G |
| DEC 31,85 | DEC 3,85 | 820 | 815 | 2 | 73.9 | 2 | 35713 | 2 | 1 | 16 | C |

| REMOVAL DATE | EXPOSURE DATE | VOLUME ML | CONDUCT. UMHO/CM | PH LAB | TOTAL H+ GRAN MG/L | SULPHATE MG/L | NITRATE AS N MG/L | CALCIUM MG/L |
|-----------------|------------------|--------------|---------------------|-----------|--------------------------|------------------|-------------------------|-----------------|
| JAN 29,85 | JAN 2,85 | 1399.0 | 22.8 | 4.35 | 0.0667 | 0.80 | 0.60 | 0.07 |
| FEB 26,85 | JAN 29,85 | 2534.0 | 25.4 | 4.29 | 0.0744 | 1.35 | 0.53 | 0.01 |
| MAR 26,85 | FEB 26,85 | 2213.0 | 28.3 | 4.41 | 0.0729 | 2.25 | 0.68 | 0.33 |
| APR 23,85 | MAR 26,85 | 3586.0 | 27.6 | 4.42 | 0.0719 | 3.10 | 0.56 | 0.43 |
| MAY 21,85 | APR 23,85 | 1618.0 | 34.7 | 4.27 | 0.0788 | 4.30 | 0.60 | 0.47 |
| JUN 18,85 | MAY 21,85 | 722.0 | 33.0 | 4.34 | 0.0710 | 4.40 | 0.68 | 0.62 |
| JUL 22,85 | JUN 18,85 | 2627.0 | 26.0 | 4.40 | 0.0647 | 3.15 | 0.45 | 0.37 |
| AUG 13,85 | JUL 22,85 | 2718.0 | 34.0 | 4.28 | 0.0845 | 3.70 | 0.42 | 0.17 |
| SEP 10,85 | AUG 13,85 | 3097.0 | 34.7 | 4.18 | 0.0914 | 3.55 | 0.42 | 0.06 |
| NOV 5,85 | SEP 10,85 | 4724.0 | 29.2 | 4.35 | 0.0684 | 2.20 | 0.35 | 0.20 |
| DEC 3,85 | NOV 5,85 | 2052.0 | 11.6 | 4.78 | LG 0.0412 | 0.90 | 0.23 | 0.09 |
| DEC 31,85 | DEC 3,85 | 387.0 | B 56.4 | 4.01 | UG 0.1430 | D 3.80 | B 1.23 | 0.32 |

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : MCKELLAR/CUMULATIVE PRECIP.

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PAGE : 2

| REMOVAL DATE | EXPOSURE DATE | CHLORIDE MG/L | KJELDAHL AS N MG/L | MAGNESIM MG/L | POTASSIM MG/L | SODIUM MG/L | AMMONIUM AS N MG/L | PHOSPHOR MG/L |
|-----------------|------------------|------------------|--------------------------|------------------|------------------|----------------|--------------------------|------------------|
| JAN 29,85 | JAN 2,85 | 0.19 | 0.20 | <T 0.005 | <T 0.005 | 0.090 | 0.130 | 0.008 |
| FEB 26,85 | JAN 29,85 | 0.19 | 0.19 | <T 0.005 | <T 0.015 | 0.065 | 0.130 | 0.009 |
| MAR 26,85 | FEB 26,85 | 0.18 | 0.47 | 0.030 | <W 0.005 | 0.065 | 0.430 | 0.006 |
| APR 23,85 | MAR 26,85 | 0.18 | 0.61 | 0.055 | 0.030 | 0.080 | 0.530 | <T 0.004 |
| MAY 21,85 | APR 23,85 | 0.10 | 0.81 | 0.090 | 0.040 | <T 0.015 | 0.675 | 0.010 |
| JUN 18,85 | MAY 21,85 | 0.08 | 0.87 | 0.110 | 0.060 | B 0.145 | 0.725 | 0.009 |
| JUL 22,85 | JUN 18,85 | 0.13 | 0.66 | 0.070 | 0.075 | 0.060 | 0.445 | 0.016 |
| AUG 13,85 | JUL 22,85 | 0.08 | 0.50 | 0.060 | <T 0.015 | 0.025 | 0.425 | 0.007 |
| SEP 10,85 | AUG 13,85 | 0.09 | 0.35 | 0.040 | 0.020 | 0.035 | 0.325 | <T 0.002 |
| NOV 5,85 | SEP 10,85 | 0.08 | 0.23 | 0.030 | <T 0.005 | 0.025 | 0.195 | <T 0.003 |
| DEC 3,85 | NOV 5,85 | 0.20 | 0.20 | <T 0.010 | 0.040 | 0.155 | 0.140 | <W 0.001 |
| DEC 31,85 | DEC 3,85 | B 0.90 | 0.71 | 0.065 | 0.080 | B 0.635 | D 0.435 | 0.025 |

| REMOVAL DATE | EXPOSURE DATE | MANGANSE MG/L | NICKEL MG/L | ZINC MG/L | IRON MG/L | LEAD MG/L | VANADIUM MG/L | ALUMINUM MG/L |
|-----------------|------------------|------------------|----------------|--------------|--------------|--------------|------------------|------------------|
| JAN 29,85 | JAN 2,85 | < 0.001 | 0.0009 | 0.007 | 0.042 | 0.006 | < 0.0004 | 0.015 |
| FEB 26,85 | JAN 29,85 | < 0.001 | 0.0006 | 0.003 | 0.011 | 0.007 | < 0.0004 | 0.015 |
| MAR 26,85 | FEB 26,85 | 0.003 | 0.0002 | D 0.014 | 0.065 | 0.012 | < 0.0004 | 0.060 |
| APR 23,85 | MAR 26,85 | 0.005 | 0.0003 | 0.006 | 0.073 | 0.009 | < 0.0004 | 0.067 |
| MAY 21,85 | APR 23,85 | 0.008 | < 0.0002 | 0.006 | 0.111 | 0.007 | < 0.0004 | 0.105 |
| JUN 18,85 | MAY 21,85 | 0.010 | 0.0005 | L 0.002 | L 0.022 | L 0.003 | 0.0005 | L 0.033 |
| JUL 22,85 | JUN 18,85 | 0.006 | 0.0004 | 0.006 | 0.115 | 0.004 | < 0.0004 | 0.124 |
| AUG 13,85 | JUL 22,85 | 0.003 | 0.0003 | 0.006 | 0.077 | 0.011 | 0.0004 | 0.019 |
| SEP 10,85 | AUG 13,85 | 0.002 | < 0.0002 | 0.003 | 0.008 | 0.004 | < 0.0004 | 0.021 |
| NOV 5,85 | SEP 10,85 | UG 0.015 | 0.0004 | 0.003 | 0.025 | 0.002 | < 0.0004 | 0.016 |
| DEC 3,85 | NOV 5,85 | < 0.001 | D 0.0004 | D 0.004 | 0.011 | < 0.001 | < 0.0004 | 0.013 |
| DEC 31,85 | DEC 3,85 | 0.004 | 0.0009 | 0.018 | 0.043 | 0.010 | < 0.0004 | 0.057 |

ONTARIO MINISTRY OF THE ENVIRONMENT
 CUMULATIVE SAMPLING ANALYSIS RESULTS
 APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : MCKELLAR/CUMULATIVE PRECIP.

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PAGE : 3

| REMOVAL DATE | EXPOSURE DATE | COPPER MG/L | CADMIUM MG/L | FREE H+ MG/L |
|-----------------|------------------|----------------|-----------------|-----------------|
| JAN 29,85 | JAN 2,85 | D 0.0054 | 0.00022 | 0.0447 |
| FEB 26,85 | JAN 29,85 | 0.0003 | 0.00007 | 0.0513 |
| MAR 26,85 | FEB 26,85 | 0.0018 | 0.00009 | 0.0389 |
| APR 23,85 | MAR 26,85 | 0.0014 | 0.00008 | 0.0380 |
| MAY 21,85 | APR 23,85 | 0.0014 | < 0.00002 | 0.0537 |
| JUN 18,85 | MAY 21,85 | L 0.0010 | UG 0.00015 | 0.0457 |
| JUL 22,85 | JUN 18,85 | 0.0014 | 0.00009 | 0.0398 |
| AUG 13,85 | JUL 22,85 | 0.0003 | 0.00008 | 0.0525 |
| SEP 10,85 | AUG 13,85 | 0.0004 | 0.00006 | 0.0661 |
| NOV 5,85 | SEP 10,85 | 0.0004 | 0.00003 | 0.0447 |
| DEC 3,85 | NOV 5,85 | 0.0013 | 0.00007 | 0.0166 |
| DEC 31,85 | DEC 3,85 | D 0.0061 | 0.00036 | 0.0977 |

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : MOONBEAM/CUMULATIVE PRECIP.

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PAGE : 1

| REMOVAL DATE | EXPOSURE DATE | SAMPLING START HR. | SAMPLING END HR. | SAMPLE TYPE 01-RAIN 02-SNOW 03-COMP/04-OTHER | GAUGE DEPTH(MM) | GAUGE TYPE 02,03-APIOS 09-AES | SAMPLE NUMBER | PROJECT CODE 02-APIOS 03-SPECIAL | SUBPROJECT CODE 01-MOE 03-AES | SAMPLER EFFICI- ENCY (%) | COMMENTS FIELD OFFICE |
|-----------------|------------------|--------------------------|------------------------|--|--------------------|--|------------------|---|--|-----------------------------------|--------------------------|
| JAN 29,85 | JAN 3,85 | 1415 | 1410 | 2 | 36.6 | 9 | 35332 | 2 | 1 | I 22 | |
| FEB 26,85 | JAN 29,85 | 1410 | 1415 | 3 | 66.0 | 2 | 35373 | 2 | 1 | U 22 | G N |
| MAR 26,85 | FEB 26,85 | 1415 | 1440 | 3 | 12.0 | 2 | 35379 | 2 | 1 | U 16 | G N |
| APR 23,85 | MAR 26,85 | 1440 | 1320 | 3 | 38.0 | 2 | 35421 | 2 | 1 | 45 | CD N |
| MAY 21,85 | APR 23,85 | 1320 | 1410 | 1 | 41.0 | 2 | 35458 | 2 | 1 | 105 | ACD |
| JUN 18,85 | MAY 21,85 | 1410 | 1145 | 1 | 50.0 | 2 | 35472 | 2 | 1 | 74 | D |
| JUL 22,85 | JUN 18,85 | 1145 | 1330 | 1 | 90.0 | 2 | 35505 | 2 | 1 | 141 | N |
| AUG 14,85 | JUL 22,85 | 1330 | 1335 | 1 | 72.0 | 3 | 35542 | 2 | 1 | 83 | C |
| SEP 10,85 | AUG 14,85 | 1335 | 1445 | 1 | 40.0 | 3 | 35577 | 2 | 1 | 70 | |
| OCT 10,85 | SEP 10,85 | 1445 | 1335 | 1 | 70.0 | 3 | 35614 | 2 | 1 | 99 | CD HCM |
| NOV 5,85 | OCT 10,85 | 1335 | 1320 | 3 | 30.0 | 2 | 35645 | 2 | 1 | 166 | N |
| DEC 3,85 | NOV 5,85 | 1320 | 1420 | 3 | 58.0 | 2 | 35680 | 2 | 1 | 51 | CD |
| DEC 31,85 | DEC 3,85 | 1420 | 1435 | 2 | 20.0 | 2 | 35710 | 2 | 1 | U 21 | G N |

| REMOVAL DATE | EXPOSURE DATE | VOLUME ML | CONDUCT. UMHO/CM | PH LAB | TOTAL H+ GRAN MG/L | SULPHATE MG/L | NITRATE AS N MG/L | CALCIUM MG/L |
|-----------------|------------------|--------------|---------------------|-----------|--------------------------|------------------|-------------------------|-----------------|
| JAN 29,85 | JAN 3,85 | 271.0 | 10.4 | UG 5.20 | LG 0.0260 | 1.40 | 0.20 | B 0.59 |
| FEB 26,85 | JAN 29,85 | 474.0 | 19.1 | 4.48 | 0.0585 | 1.40 | 0.50 | 0.35 |
| MAR 26,85 | FEB 26,85 | 65.0 | UG 59.1 | U 7.87 | U 0.0077 | 4.00 | 0.57 | ***** |
| APR 23,85 | MAR 26,85 | 557.0 | 16.7 | U 6.08 | U 0.0266 | 3.35 | 0.41 | U 1.04 |
| MAY 21,85 | APR 23,85 | 1400.0 | 42.1 | 4.08 | 0.1020 | 4.55 | 0.54 | 0.37 |
| JUN 18,85 | MAY 21,85 | 1205.0 | 17.5 | 4.51 | 0.0490 | 1.90 | 0.20 | 0.19 |
| JUL 22,85 | JUN 18,85 | 4132.0 | LG 7.7 | 4.87 | 0.0347 | LG 0.75 | LG 0.08 | 0.09 |
| AUG 14,85 | JUL 22,85 | 1955.0 | 18.3 | 4.55 | 0.0538 | 1.85 | 0.22 | 0.07 |
| SEP 10,85 | AUG 14,85 | 915.0 | 13.8 | 4.60 | 0.0428 | 1.30 | 0.14 | 0.05 |
| OCT 10,85 | SEP 10,85 | 2257.0 | 17.0 | 4.99 | 0.0331 | 1.90 | 0.26 | 0.24 |
| NOV 5,85 | OCT 10,85 | 1623.0 | 17.4 | 4.47 | 0.0535 | 1.35 | 0.24 | 0.09 |
| DEC 3,85 | NOV 5,85 | 962.0 | 13.1 | 4.69 | 0.0432 | 1.00 | 0.16 | 0.11 |
| DEC 31,85 | DEC 3,85 | 141.0 | 18.7 | 4.50 | 0.0554 | 1.30 | 0.42 | D 0.33 |

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : MOONBEAM/CUMULATIVE PRECIP.

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PAGE : 2

| REMOVAL DATE | EXPOSURE DATE | CHLORIDE MG/L | KJELDAHL AS N MG/L | MAGNESIM MG/L | POTASSIM MG/L | SODIUM MG/L | AMMONIUM AS N MG/L | PHOSPHOR MG/L |
|-----------------|------------------|------------------|--------------------------|------------------|------------------|----------------|--------------------------|------------------|
| JAN 29,85 | JAN 3,85 | UG 0.45 | 0.46 | 0.075 | 0.025 | B 0.270 | 0.055 | 0.014 |
| FEB 26,85 | JAN 29,85 | 0.24 | 0.19 | 0.060 | 0.040 | D 0.145 | 0.100 | D 0.012 |
| MAR 26,85 | FEB 26,85 | B 0.69 | 0.71 | ***** | ***** | ***** | 0.270 | B 0.044 |
| APR 23,85 | MAR 26,85 | 0.13 | 0.67 | B 0.175 | 0.045 | 0.085 | 0.510 | 0.008 |
| MAY 21,85 | APR 23,85 | 0.13 | 0.59 | 0.070 | 0.070 | 0.035 | 0.420 | 0.008 |
| JUN 18,85 | MAY 21,85 | 0.01 | 0.31 | 0.035 | 0.035 | 0.010 | 0.190 | 0.009 |
| JUL 22,85 | JUN 18,85 | <T 0.04 | 0.15 | 0.020 | 0.025 | <T 0.005 | 0.085 | <T 0.001 |
| AUG 14,85 | JUL 22,85 | <T 0.06 | 0.22 | 0.035 | <T 0.010 | 0.020 | 0.160 | 0.006 |
| SEP 10,85 | AUG 14,85 | <W 0.01 | 0.13 | 0.025 | <T 0.015 | <T 0.005 | 0.080 | <T 0.003 |
| OCT 10,85 | SEP 10,85 | 0.07 | 0.28 | 0.035 | 0.035 | 0.105 | 0.200 | 0.008 |
| NOV 5,85 | OCT 10,85 | <T 0.05 | 0.13 | 0.020 | <T 0.005 | 0.020 | 0.085 | <T 0.003 |
| DEC 3,85 | NOV 5,85 | <T 0.05 | 0.09 | <T 0.010 | <T 0.010 | 0.040 | LG 0.020 | 0.006 |
| DEC 31,85 | DEC 3,85 | 0.17 | 0.16 | D 0.055 | 0.020 | 0.110 | 0.085 | <T 0.001 |

| REMOVAL DATE | EXPOSURE DATE | MANGANSE MG/L | NICKEL MG/L | ZINC MG/L | IRON MG/L | LEAD MG/L | VANADIUM MG/L | ALUMINUM MG/L |
|-----------------|------------------|------------------|----------------|--------------|--------------|--------------|------------------|------------------|
| JAN 29,85 | JAN 3,85 | UG 0.007 | 0.0012 | 0.007 | 0.045 | 0.013 | 0.0004 | 0.042 |
| FEB 26,85 | JAN 29,85 | 0.004 | D 0.0010 | 0.008 | 0.040 | 0.015 | < 0.0004 | D 0.070 |
| MAR 26,85 | FEB 26,85 | ***** | ***** | ***** | ***** | ***** | ***** | ***** |
| APR 23,85 | MAR 26,85 | UG 0.009 | 0.0005 | 0.009 | U 0.220 | 0.012 | 0.0005 | B 0.163 |
| MAY 21,85 | APR 23,85 | 0.006 | 0.0005 | 0.006 | 0.082 | 0.008 | < 0.0004 | 0.070 |
| JUN 18,85 | MAY 21,85 | 0.004 | 0.0038 | 0.002 | 0.026 | 0.006 | 0.0004 | 0.021 |
| JUL 22,85 | JUN 18,85 | 0.001 | < 0.0002 | 0.001 | 0.014 | 0.001 | < 0.0004 | 0.014 |
| AUG 14,85 | JUL 22,85 | 0.003 | < 0.0002 | 0.004 | 0.023 | 0.007 | 0.0004 | 0.014 |
| SEP 10,85 | AUG 14,85 | 0.001 | < 0.0002 | 0.002 | 0.011 | 0.003 | < 0.0004 | 0.020 |
| OCT 10,85 | SEP 10,85 | 0.003 | < 0.0002 | 0.002 | 0.032 | 0.001 | <W 0.0001 | 0.040 |
| NOV 5,85 | OCT 10,85 | < 0.001 | < 0.0002 | 0.001 | 0.006 | 0.008 | < 0.0004 | 0.012 |
| DEC 3,85 | NOV 5,85 | 0.001 | 0.0002 | 0.003 | D 0.030 | < 0.002 | < 0.0004 | 0.025 |
| DEC 31,85 | DEC 3,85 | D 0.006 | 0.0005 | 0.009 | 0.041 | 0.009 | < 0.0004 | 0.078 |

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ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : MOONBEAM/CUMULATIVE PRECIP.

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PAGE : 3

| REMOVAL DATE | EXPOSURE DATE | COPPER MG/L | CADMIUM MG/L | FREE H+ MG/L |
|-----------------|------------------|----------------|-----------------|-----------------|
| JAN 29,85 | JAN 3,85 | 0.0024 | U 0.00190 | LG 0.0063 |
| FEB 26,85 | JAN 29,85 | D 0.0028 | 0.00007 | 0.0331 |
| MAR 26,85 | FEB 26,85 | ***** | ***** | U 0.0000 |
| APR 23,85 | MAR 26,85 | 0.0040 | 0.00018 | U 0.0008 |
| MAY 21,85 | APR 23,85 | 0.0002 | UG 0.00014 | 0.0832 |
| JUN 18,85 | MAY 21,85 | U 0.0022 | 0.00010 | 0.0309 |
| JUL 22,85 | JUN 18,85 | 0.0014 | 0.00003 | 0.0135 |
| AUG 14,85 | JUL 22,85 | 0.0004 | 0.00003 | 0.0282 |
| SEP 10,85 | AUG 14,85 | 0.0013 | 0.00003 | 0.0251 |
| OCT 10,85 | SEP 10,85 | 0.0003 | 0.00006 | 0.0102 |
| NOV 5,85 | OCT 10,85 | 0.0013 | 0.00006 | 0.0339 |
| DEC 3,85 | NOV 5,85 | 0.0007 | 0.00006 | 0.0204 |
| DEC 31,85 | DEC 3,85 | 0.0013 | 0.00021 | 0.0316 |

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : TURKEY LAKE/CUMULATIVE PRECIP.

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PAGE : 1

| REMOVAL DATE | EXPOSURE DATE | SAMPLING START HR. | END HR. | SAMPLE TYPE 01-RAIN 02-SNOW 03-COMP/04-OTHER | GAUGE DEPTH(MM) | GAUGE TYPE 02,03-APIOS 09-AES | SAMPLE NUMBER | PROJECT CODE 02-APIOS 03-SPECIAL | SUBPROJECT CODE 01-MOE 03-AES | SAMPLER EFFICI- ENCY (%) | COMMENTS FIELD OFFICE |
|-----------------|------------------|--------------------------|------------|--|--------------------|--|------------------|---|--|-----------------------------------|--------------------------|
| JAN 29,85 | JAN 1,85 | 1200 | 1130 | 2 | 15.9 | 9 | 35326 | 2 | 1 | I 150 | |
| FEB 26,85 | JAN 29,85 | 1130 | 1130 | 3 | 24.3 | 9 | 35359 | 2 | 1 | I 202 | |
| MAR 26,85 | FEB 26,85 | 1130 | 1230 | 3 | 35.0 | 9 | 35383 | 2 | 1 | I 107 | |
| APR 30,85 | MAR 26,85 | 1230 | 1300 | 3 | 85.8 | 9 | 35415 | 2 | 1 | I 101 | BCD |
| MAY 21,85 | APR 30,85 | 1300 | 830 | 1 | 50.9 | 9 | 35455 | 2 | 1 | I 90 | ACD |
| JUN 20,85 | MAY 21,85 | 830 | 500 | 1 | 87.3 | 9 | 35476 | 2 | 1 | I 91 | BD |
| JUL 16,85 | JUN 20,85 | 500 | 850 | 1 | 98.7 | 9 | 35510 | 2 | 1 | I 50 | C |
| AUG 13,85 | JUL 16,85 | 850 | 945 | 1 | 94.1 | 9 | 35536 | 2 | 1 | I 97 | |
| SEP 10,85 | AUG 13,85 | 945 | 1000 | 1 | 81.9 | 9 | 35583 | 2 | 1 | U 5 | GC |
| OCT 8,85 | SEP 10,85 | 1000 | 1130 | 1 | 39.0 | 9 | 35613 | 2 | 1 | I 302 | |
| NOV 5,85 | OCT 8,85 | 1145 | 930 | 3 | 69.2 | 9 | 35643 | 2 | 1 | I 108 | C |
| DEC 3,85 | NOV 5,85 | 930 | 1100 | 3 | 102.4 | 9 | 35678 | 2 | 1 | I 65 | C |
| DEC 31,85 | DEC 3,85 | 1100 | 1130 | 2 | 29.2 | 9 | 35709 | 2 | 1 | I 190 | |

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| REMOVAL DATE | EXPOSURE DATE | VOLUME ML | CONDUCT. UMHO/CM | PH LAB | TOTAL H+ GRAN MG/L | SULPHATE MG/L | NITRATE AS N MG/L | CALCIUM MG/L |
|-----------------|------------------|--------------|---------------------|-----------|--------------------------|------------------|-------------------------|-----------------|
| JAN 29,85 | JAN 1,85 | 778.0 | 12.9 | 4.70 | 0.0413 | 0.80 | 0.29 | 0.10 |
| FEB 26,85 | JAN 29,85 | 1598.0 | 29.6 | 4.27 | 0.0798 | 2.20 | 0.70 | 0.14 |
| MAR 26,85 | FEB 26,85 | 1218.0 | 28.0 | 4.54 | 0.0641 | 3.05 | 0.75 | 0.43 |
| APR 30,85 | MAR 26,85 | 2836.0 | 39.1 | 4.34 | 0.0842 | 5.10 | 0.74 | UG 0.59 |
| MAY 21,85 | APR 30,85 | 1489.0 | 24.6 | 4.61 | 0.0484 | 3.95 | 0.59 | 0.80 |
| JUN 20,85 | MAY 21,85 | 2593.0 | 22.5 | 4.49 | 0.0508 | 2.70 | 0.38 | 0.25 |
| JUL 16,85 | JUN 20,85 | 1611.0 | 19.3 | 4.58 | 0.0511 | 2.40 | 0.36 | 0.35 |
| AUG 13,85 | JUL 16,85 | 2988.0 | B 56.4 | 4.05 | UG 0.1380 | D 6.30 | UG 0.73 | D 0.35 |
| SEP 10,85 | AUG 13,85 | 152.0 | 23.0 | 4.44 | 0.0555 | 2.65 | 0.32 | 0.06 |
| OCT 8,85 | SEP 10,85 | 3831.0 | 20.6 | 4.46 | 0.0608 | 1.80 | 0.33 | 0.17 |
| NOV 5,85 | OCT 8,85 | 2434.0 | 28.7 | 4.28 | 0.0770 | 2.65 | 0.53 | B 0.52 |
| DEC 3,85 | NOV 5,85 | 2176.0 | 12.2 | 4.76 | 0.0399 | 1.00 | 0.24 | 0.13 |
| DEC 31,85 | DEC 3,85 | 1806.0 | 12.4 | 4.66 | 0.0412 | 0.80 | D 0.22 | 0.06 |

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : TURKEY LAKE/CUMULATIVE PRECIP.

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PAGE : 2

| REMOVAL DATE | EXPOSURE DATE | CHLORIDE MG/L | KJELDAHL AS N MG/L | MAGNESIUM MG/L | POTASSIUM MG/L | SODIUM MG/L | AMMONIUM AS N MG/L | PHOSPHOR MG/L |
|-----------------|------------------|------------------|--------------------------|-------------------|-------------------|----------------|--------------------------|------------------|
| JAN 29,85 | JAN 1,85 | 0.09 | 0.16 | 0.015 | <W 0.005 | 0.035 | 0.095 | 0.005 |
| FEB 26,85 | JAN 29,85 | 0.16 | D 0.53 | 0.025 | 0.040 | <T 0.015 | D 0.480 | <T 0.004 |
| MAR 26,85 | FEB 26,85 | 0.18 | 0.87 | 0.045 | <T 0.015 | 0.075 | 0.790 | 0.011 |
| APR 30,85 | MAR 26,85 | 0.18 | 0.97 | 0.085 | 0.055 | 0.085 | UG 1.000 | <T 0.004 |
| MAY 21,85 | APR 30,85 | 0.10 | 0.86 | 0.145 | 0.070 | <T 0.020 | 0.720 | 0.013 |
| JUN 20,85 | MAY 21,85 | 0.01 | 0.57 | 0.050 | 0.055 | D 0.100 | 0.495 | 0.006 |
| JUL 16,85 | JUN 20,85 | 0.07 | 0.61 | 0.055 | 0.060 | 0.025 | 0.405 | 0.008 |
| AUG 13,85 | JUL 16,85 | 0.13 | 0.82 | D 0.105 | 0.050 | 0.040 | 0.730 | 0.008 |
| SEP 10,85 | AUG 13,85 | <T 0.05 | 0.57 | D 0.045 | 0.065 | 0.025 | 0.390 | 0.014 |
| OCT 8,85 | SEP 10,85 | <T 0.06 | 0.18 | 0.025 | 0.030 | <T 0.005 | 0.150 | <T 0.003 |
| NOV 5,85 | OCT 8,85 | 0.08 | 0.36 | D 0.105 | <T 0.020 | 0.025 | 0.310 | <T 0.004 |
| DEC 3,85 | NOV 5,85 | <T 0.03 | 0.15 | D 0.030 | U 0.115 | 0.025 | 0.065 | 0.007 |
| DEC 31,85 | DEC 3,85 | 0.11 | 0.09 | <T 0.015 | 0.020 | 0.095 | 0.080 | <T 0.004 |

| REMOVAL DATE | EXPOSURE DATE | MANGANESE MG/L | NICKEL MG/L | ZINC MG/L | IRON MG/L | LEAD MG/L | VANADIUM MG/L | ALUMINUM MG/L |
|-----------------|------------------|-------------------|----------------|--------------|--------------|--------------|------------------|------------------|
| JAN 29,85 | JAN 1,85 | 0.002 | 0.0010 | 0.003 | 0.021 | 0.009 | < 0.0004 | 0.020 |
| FEB 26,85 | JAN 29,85 | 0.003 | 0.0004 | 0.007 | 0.018 | 0.007 | < 0.0004 | 0.028 |
| MAR 26,85 | FEB 26,85 | 0.005 | < 0.0002 | 0.018 | 0.063 | 0.004 | < 0.0004 | 0.066 |
| APR 30,85 | MAR 26,85 | UG 0.008 | 0.0004 | 0.009 | 0.073 | 0.002 | < 0.0004 | 0.067 |
| MAY 21,85 | APR 30,85 | 0.004 | 0.0004 | 0.006 | 0.130 | 0.012 | < 0.0004 | 0.112 |
| JUN 20,85 | MAY 21,85 | 0.005 | 0.0002 | 0.002 | 0.044 | 0.004 | 0.0004 | 0.039 |
| JUL 16,85 | JUN 20,85 | 0.007 | D 0.0003 | 0.006 | 0.083 | 0.003 | < 0.0004 | 0.093 |
| AUG 13,85 | JUL 16,85 | D 0.006 | 0.0007 | 0.009 | 0.048 | 0.008 | 0.0004 | 0.036 |
| SEP 10,85 | AUG 13,85 | D 0.004 | 0.0002 | 0.009 | B 0.292 | 0.020 | D 0.0006 | B 0.219 |
| OCT 8,85 | SEP 10,85 | D 0.012 | U 0.0020 | U 0.084 | U 0.736 | 0.011 | U 0.0032 | U 0.487 |
| NOV 5,85 | OCT 8,85 | 0.004 | 0.0003 | 0.005 | 0.052 | 0.005 | < 0.0004 | 0.059 |
| DEC 3,85 | NOV 5,85 | B 0.011 | 0.0004 | 0.005 | 0.013 | 0.001 | < 0.0004 | 0.016 |
| DEC 31,85 | DEC 3,85 | 0.001 | < 0.0002 | 0.002 | D 0.008 | 0.001 | < 0.0004 | 0.009 |

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ONTARIO MINISTRY OF THE ENVIRONMENT
 CUMULATIVE SAMPLING ANALYSIS RESULTS
 APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : TURKEY LAKE/CUMULATIVE PRECIP.

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PAGE 1 - 3

| REMOVAL DATE | EXPOSURE DATE | COPPER MG/L | CADMIUM MG/L | FREE H+ MG/L |
|-----------------|------------------|----------------|-----------------|-----------------|
| JAN 29,85 | JAN 1,85 | 0.0013 | 0.00004 | 0.0200 |
| FEB 26,85 | JAN 29,85 | < 0.0003 | 0.00010 | 0.0537 |
| MAR 26,85 | FEB 26,85 | 0.0012 | 0.00014 | 0.0288 |
| APR 30,85 | MAR 26,85 | 0.0014 | 0.00015 | 0.0457 |
| MAY 21,85 | APR 30,85 | 0.0005 | UG 0.00012 | 0.0245 |
| JUN 20,85 | MAY 21,85 | 0.0013 | 0.00006 | 0.0324 |
| JUL 16,85 | JUN 20,85 | 0.0005 | 0.00005 | 0.0263 |
| AUG 13,85 | JUL 16,85 | 0.0004 | 0.00010 | 0.0891 |
| SEP 10,85 | AUG 13,85 | 0.0028 | UG 0.00011 | 0.0363 |
| OCT 8,85 | SEP 10,85 | 0.0009 | 0.00007 | 0.0347 |
| NOV 5,85 | OCT 8,85 | 0.0012 | 0.00006 | 0.0525 |
| DEC 3,85 | NOV 5,85 | 0.0009 | 0.00008 | 0.0174 |
| DEC 31,85 | DEC 3,85 | 0.0004 | 0.00006 | 0.0219 |

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : WHITNEY/CUMULATIVE PRECIP.

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PAGE : 1

| REMOVAL DATE | EXPOSURE DATE | SAMPLING START HR. | SAMPLING END HR. | SAMPLE TYPE 01-RAIN 02-SNOW 03-COMP/04-OTHER | GAUGE DEPTH(MM) | GAUGE TYPE 02,03-APIOS 09-AES | SAMPLE NUMBER | PROJECT CODE 02-APIOS 03-SPECIAL | SUBPROJECT CODE 01-MOE 03-AES | SAMPLER EFFICI- ENCY (%) | COMMENTS FIELD OFFICE |
|-----------------|------------------|--------------------------|------------------------|--|--------------------|--|------------------|---|--|-----------------------------------|--------------------------|
| JAN 29,85 | JAN 2,85 | 930 | 1430 | 2 | 33.0 | 2 | 29403 | 2 | 1 | U 76 | FJ |
| FEB 26,85 | JAN 29,85 | 1430 | 1100 | 3 | 78.0 | 2 | 29413 | 2 | 1 | U 27 | FI M |
| MAR 26,85 | FEB 26,85 | 1100 | 1400 | 3 | 78.0 | 2 | 29414 | 2 | 1 | U 69 | QFJ |
| APR 23,85 | MAR 26,85 | 1400 | 930 | 3 | 94.0 | 2 | 29425 | 2 | 1 | U 41 | FIJC |
| MAY 21,85 | APR 23,85 | 930 | 1600 | 1 | 52.0 | 3 | 29438 | 2 | 1 | U 83 | AFJ |
| JUN 18,85 | MAY 21,85 | 1600 | 1315 | 1 | 40.0 | 3 | 29449 | 2 | 1 | 105 | C |
| JUL 17,85 | JUN 18,85 | 1315 | 900 | 1 | 50.0 | 3 | 29460 | 2 | 1 | 94 | QA |
| AUG 13,85 | JUL 17,85 | 900 | 1040 | 1 | 56.0 | 3 | 29468 | 2 | 1 | 95 | Q |
| SEP 11,85 | AUG 13,85 | 1040 | 920 | 1 | 102.0 | 3 | 29476 | 2 | 1 | 92 | A M |
| OCT 8,85 | SEP 11,85 | 920 | 1415 | 1 | 53.0 | 3 | 29494 | 2 | 1 | 93 | |
| NOV 5,85 | OCT 8,85 | 1415 | 1315 | 1 | 58.0 | 3 | 29495 | 2 | 1 | 93 | |
| DEC 3,85 | NOV 5,85 | 1315 | 1330 | 3 | 62.0 | 2 | 29503 | 2 | 1 | U 0 | G |
| JAN 2,86 | DEC 3,85 | 1330 | 1600 | 2 | 52.1 | 9 | 29504 | 2 | 1 | U 66 | FJ |

| REMOVAL DATE | EXPOSURE DATE | VOLUME ML | CONDUCT. UMHO/CM | PH LAB | TOTAL H+ GRAN MG/L | SULPHATE MG/L | NITRATE AS N MG/L | CALCIUM MG/L |
|-----------------|------------------|--------------|---------------------|-----------|--------------------------|------------------|-------------------------|-----------------|
| JAN 29,85 | JAN 2,85 | 816.0 | 28.9 | 4.22 | 0.0808 | 0.75 | 0.76 | 0.11 |
| FEB 26,85 | JAN 29,85 | 704.0 | 25.0 | 4.38 | 0.0752 | 0.90 | 0.65 | 0.20 |
| MAR 26,85 | FEB 26,85 | 1765.0 | 23.8 | 4.46 | 0.0649 | 1.80 | 0.51 | 0.33 |
| APR 23,85 | MAR 26,85 | 1259.0 | 30.4 | 4.30 | 0.0806 | 3.00 | 0.49 | 0.36 |
| MAY 21,85 | APR 23,85 | 1409.0 | 26.6 | 4.59 | 0.0584 | 3.50 | 0.59 | 0.29 |
| JUN 18,85 | MAY 21,85 | 1374.0 | 26.2 | 4.45 | 0.0711 | 3.05 | 0.38 | 0.52 |
| JUL 17,85 | JUN 18,85 | 1535.0 | 47.4 | 4.08 | 0.1200 | 5.15 | 0.62 | 0.40 |
| AUG 13,85 | JUL 17,85 | 1728.0 | 33.4 | 4.27 | 0.0853 | 4.05 | 0.52 | 0.38 |
| SEP 11,85 | AUG 13,85 | 3055.0 | 30.7 | 4.22 | 0.0910 | 3.35 | 0.32 | 0.06 |
| OCT 8,85 | SEP 11,85 | 1601.0 | 34.0 | 4.15 | 0.0927 | 2.85 | 0.46 | 0.13 |
| NOV 5,85 | OCT 8,85 | 1755.0 | 18.6 | 4.43 | 0.0598 | 1.60 | 0.25 | 0.10 |
| DEC 3,85 | NOV 5,85 | 12.0 | ***** | ***** | ***** | ***** | ***** | 0.09 |
| JAN 2,86 | DEC 3,85 | 1128.0 | 33.8 | 4.14 | 0.0910 | 1.90 | 0.81 | 0.18 |

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : WHITNEY/CUMULATIVE PRECIP.

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PAGE 1 2

| REMOVAL DATE | EXPOSURE DATE | CHLORIDE MG/L | KJELDAHL AS N MG/L | MAGNESIM MG/L | POTASSIM MG/L | SODIUM MG/L | AMMONIUM AS N MG/L | PHOSPHOR MG/L |
|-----------------|------------------|------------------|--------------------------|------------------|------------------|----------------|--------------------------|------------------|
| JAN 29,85 | JAN 2,85 | 0.15 | 0.14 | <T 0.005 | <T 0.005 | 0.030 | 0.060 | 0.013 |
| FEB 26,85 | JAN 29,85 | 0.25 | 0.12 | D 0.020 | 0.005 | 0.090 | LG 0.025 | 0.008 |
| MAR 26,85 | FEB 26,85 | 0.14 | 0.29 | 0.030 | 0.005 | 0.055 | 0.185 | 0.012 |
| APR 23,85 | MAR 26,85 | 0.21 | 0.41 | 0.035 | 0.040 | 0.145 | 0.350 | 0.012 |
| MAY 21,85 | APR 23,85 | 0.12 | 1.24 | 0.035 | 0.080 | 0.065 | 0.980 | 0.048 |
| JUN 18,85 | MAY 21,85 | 0.10 | 0.40 | 0.065 | 0.045 | 0.040 | 0.275 | 0.016 |
| JUL 17,85 | JUN 18,85 | 0.14 | 0.59 | 0.055 | 0.050 | 0.050 | 0.525 | <T 0.005 |
| AUG 13,85 | JUL 17,85 | 0.12 | 0.45 | 0.060 | 0.035 | 0.020 | 0.435 | <T 0.003 |
| SEP 11,85 | AUG 13,85 | <T 0.06 | 0.22 | <T 0.010 | <T 0.010 | <T 0.010 | LG 0.160 | 0.006 |
| OCT 8,85 | SEP 11,85 | 0.11 | 0.21 | 0.020 | <T 0.005 | 0.030 | 0.215 | <T 0.001 |
| NOV 5,85 | OCT 8,85 | 0.07 | 0.12 | 0.015 | <T 0.005 | 0.035 | 0.125 | <T 0.002 |
| DEC 3,85 | NOV 5,85 | ***** | ***** | 0.025 | U 0.155 | U 0.295 | ***** | ***** |
| JAN 2,86 | DEC 3,85 | 0.26 | 0.29 | 0.025 | <T 0.005 | 0.085 | 0.240 | 0.006 |

| REMOVAL DATE | EXPOSURE DATE | MANGANESE MG/L | NICKEL MG/L | ZINC MG/L | IRON MG/L | LEAD MG/L | VANADIUM MG/L | ALUMINUM MG/L |
|-----------------|------------------|-------------------|----------------|--------------|--------------|--------------|------------------|------------------|
| JAN 29,85 | JAN 2,85 | < 0.001 | 0.0005 | 0.004 | 0.019 | 0.009 | < 0.0004 | 0.020 |
| FEB 26,85 | JAN 29,85 | 0.001 | 0.0003 | D 0.010 | D 0.030 | 0.007 | 0.0004 | 0.025 |
| MAR 26,85 | FEB 26,85 | 0.003 | 0.0002 | 0.004 | 0.039 | 0.009 | 0.0004 | 0.043 |
| APR 23,85 | MAR 26,85 | 0.002 | < 0.0002 | 0.005 | 0.041 | 0.009 | < 0.0004 | 0.044 |
| MAY 21,85 | APR 23,85 | 0.004 | 0.0003 | 0.006 | 0.041 | 0.008 | < 0.0004 | 0.044 |
| JUN 18,85 | MAY 21,85 | U 0.011 | < 0.0002 | 0.005 | U 0.141 | 0.008 | < 0.0004 | U 0.170 |
| JUL 17,85 | JUN 18,85 | 0.005 | 0.0002 | 0.004 | 0.063 | 0.003 | < 0.0004 | 0.082 |
| AUG 13,85 | JUL 17,85 | 0.004 | < 0.0002 | 0.005 | 0.032 | 0.005 | < 0.0004 | 0.039 |
| SEP 11,85 | AUG 13,85 | 0.001 | 0.0010 | 0.003 | 0.015 | 0.011 | < 0.0004 | 0.022 |
| OCT 8,85 | SEP 11,85 | 0.001 | 0.0003 | 0.003 | 0.076 | < 0.002 | < 0.0004 | 0.051 |
| NOV 5,85 | OCT 8,85 | < 0.001 | 0.0003 | 0.002 | 0.012 | 0.003 | < 0.0004 | 0.019 |
| DEC 3,85 | NOV 5,85 | ***** | ***** | ***** | ***** | ***** | ***** | ***** |
| JAN 2,86 | DEC 3,85 | 0.001 | < 0.0002 | 0.005 | 0.019 | 0.006 | < 0.0004 | 0.034 |

ONTARIO MINISTRY OF THE ENVIRONMENT
 CUMULATIVE SAMPLING ANALYSIS RESULTS
 APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : WHITNEY/CUMULATIVE PRECIP.

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PAGE : 3

| REMOVAL DATE | EXPOSURE DATE | COPPER MG/L | CADMIUM MG/L | FREE H+ MG/L |
|-----------------|------------------|----------------|-----------------|-----------------|
| JAN 29,85 | JAN 2,85 | 0.0004 | 0.00004 | 0.0603 |
| FEB 26,85 | JAN 29,85 | D 0.0019 | D 0.00030 | 0.0417 |
| MAR 26,85 | FEB 26,85 | 0.0013 | 0.00006 | 0.0347 |
| APR 23,85 | MAR 26,85 | 0.0012 | 0.00037 | 0.0501 |
| MAY 21,85 | APR 23,85 | 0.0005 | UG 0.00013 | 0.0257 |
| JUN 18,85 | MAY 21,85 | 0.0016 | 0.00008 | 0.0355 |
| JUL 17,85 | JUN 18,85 | < 0.0003 | 0.00006 | 0.0832 |
| AUG 13,85 | JUL 17,85 | 0.0010 | 0.00004 | 0.0537 |
| SEP 11,85 | AUG 13,85 | 0.0013 | 0.00005 | 0.0603 |
| OCT 8,85 | SEP 11,85 | 0.0007 | 0.00005 | 0.0708 |
| NOV 5,85 | OCT 8,85 | 0.0004 | 0.00003 | 0.0372 |
| DEC 3,85 | NOV 5,85 | ***** | ***** | ***** |
| JAN 2,86 | DEC 3,85 | 0.0012 | 0.00008 | 0.0724 |

PART VII

NORTHWESTERN REGION

CUMULATIVE PRECIPITATION CHEMISTRY LISTINGS

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : DORION/CUMULATIVE PRECIP.

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PAGE : 1

| REMOVAL DATE | EXPOSURE DATE | SAMPLING START HR. | SAMPLING END HR. | SAMPLE TYPE 01-RAIN 02-SNOW 03-COMP/04-OTHER | GAUGE DEPTH(MM) | GAUGE TYPE 02,03-APIOS 09-AES | SAMPLE NUMBER | PROJECT CODE 02-APIOS 03-SPECIAL | SUBPROJECT CODE 01-MOE 03-AES | SAMPLER EFFICI- ENCY (%) | COMMENTS FIELD OFFICE |
|-----------------|------------------|--------------------------|------------------------|--|--------------------|--|------------------|---|--|-----------------------------------|--------------------------|
| JAN 29,85 | JAN 2,85 | 930 | 915 | 2 | 23.1 | 2 | 13093 | 2 | 1 | 46 | N |
| FEB 26,85 | JAN 29,85 | 930 | 930 | 2 | 15.4 | 2 | 13096 | 2 | 1 | 60 | |
| MAR 26,85 | FEB 26,85 | 930 | 920 | 3 | 18.7 | 2 | 13098 | 2 | 1 | 56 | C |
| APR 23,85 | MAR 26,85 | 920 | 915 | 1 | 41.1 | 2 | 13100 | 2 | 1 | 78 | |
| MAY 21,85 | APR 23,85 | 919 | 1005 | 1 | 102.5 | 2 | 13102 | 2 | 1 | 84 | H |
| JUN 18,85 | MAY 21,85 | 1005 | 910 | 1 | 55.0 | 2 | 13104 | 2 | 1 | 101 | C |
| JUL 16,85 | JUN 18,85 | 910 | 929 | 1 | 119.0 | 3 | 13106 | 2 | 1 | 67 | CA H |
| AUG 13,85 | JUL 16,85 | 929 | 920 | 1 | 107.0 | 3 | 13108 | 2 | 1 | 92 | C |
| SEP 10,85 | AUG 13,85 | 920 | 917 | 1 | 65.0 | 3 | 13110 | 2 | 1 | 81 | ACD |
| OCT 8,85 | SEP 10,85 | 920 | 830 | 1 | 187.0 | 3 | 13112 | 2 | 1 | 94 | D |
| NOV 5,85 | OCT 8,85 | 834 | 912 | 3 | 81.2 | 2 | 13115 | 2 | 1 | 85 | C |
| DEC 3,85 | NOV 5,85 | 923 | 910 | 3 | 72.8 | 2 | 13117 | 2 | 1 | 63 | |
| DEC 31,85 | DEC 3,85 | 910 | 857 | 2 | 14.1 | 2 | 13119 | 2 | 1 | 73 | |

| REMOVAL DATE | EXPOSURE DATE | VOLUME ML | CONDUCT. UMHO/CM | PH LAB | TOTAL H+ GRAN MG/L | SULPHATE MG/L | NITRATE AS N MG/L | CALCIUM MG/L |
|-----------------|------------------|--------------|---------------------|-----------|--------------------------|------------------|-------------------------|-----------------|
| JAN 29,85 | JAN 2,85 | 348.0 | 9.5 | 4.80 | 0.0385 | 0.55 | 0.18 | 0.12 |
| FEB 26,85 | JAN 29,85 | 302.0 | 22.8 | 4.44 | UG 0.0688 | D 1.55 | 0.61 | 0.16 |
| MAR 26,85 | FEB 26,85 | 346.0 | 8.0 | 5.18 | 0.0257 | 0.65 | 0.24 | 0.33 |
| APR 23,85 | MAR 26,85 | 1045.0 | 13.5 | UG 6.27 | 0.0221 | 2.40 | 0.40 | UG 0.66 |
| MAY 21,85 | APR 23,85 | 2804.0 | 15.6 | 4.68 | 0.0502 | 1.95 | 0.29 | 0.35 |
| JUN 18,85 | MAY 21,85 | 1808.0 | 12.1 | 4.75 | 0.0357 | 1.40 | 0.16 | 0.12 |
| JUL 16,85 | JUN 18,85 | 2610.0 | 10.5 | 5.12 | 0.0302 | 1.55 | 0.31 | 0.33 |
| AUG 13,85 | JUL 16,85 | 3203.0 | 12.0 | 4.70 | 0.0377 | D 1.45 | 0.21 | 0.21 |
| SEP 10,85 | AUG 13,85 | 1730.0 | 14.6 | 4.74 | 0.0421 | 1.35 | 0.24 | 0.13 |
| OCT 8,85 | SEP 10,85 | 5750.0 | 10.5 | 4.83 | 0.0342 | 1.00 | 0.12 | LG 0.05 |
| NOV 5,85 | OCT 8,85 | 2253.0 | 13.5 | 4.65 | 0.0435 | 1.05 | 0.20 | 0.08 |
| DEC 3,85 | NOV 5,85 | 1510.0 | 10.5 | 4.84 | 0.0368 | 0.85 | 0.19 | 0.24 |
| DEC 31,85 | DEC 3,85 | 337.0 | 14.6 | 4.58 | 0.0545 | 0.70 | 0.31 | 0.06 |

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ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : DORION/CUMULATIVE PRECIP.

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PAGE : 2

| REMOVAL DATE | EXPOSURE DATE | CHLORIDE MG/L | KJELDAHL AS N MG/L | MAGNESIM MG/L | POTASSIM MG/L | SODIUM MG/L | AMMONIUM AS N MG/L | PHOSPHOR MG/L |
|-----------------|------------------|------------------|--------------------------|------------------|------------------|----------------|--------------------------|------------------|
| JAN 29,85 | JAN 2,85 | 0.13 | 0.09 | <T 0.010 | <W 0.005 | 0.080 | 0.030 | 0.016 |
| FEB 26,85 | JAN 29,85 | 0.22 | 0.44 | 0.020 | 0.025 | 0.165 | 0.410 | 0.017 |
| MAR 26,85 | FEB 26,85 | 0.17 | 0.24 | 0.040 | 0.025 | 0.145 | 0.060 | 0.022 |
| APR 23,85 | MAR 26,85 | 0.18 | 0.77 | 0.085 | 0.050 | 0.210 | 0.665 | 0.011 |
| MAY 21,85 | APR 23,85 | <W 0.01 | 0.52 | 0.060 | 0.035 | <T 0.015 | 0.425 | 0.008 |
| JUN 18,85 | MAY 21,85 | <W 0.01 | 0.33 | 0.035 | 0.040 | 0.035 | 0.205 | 0.014 |
| JUL 16,85 | JUN 18,85 | <T 0.06 | 0.62 | 0.055 | 0.055 | 0.040 | 0.455 | 0.010 |
| AUG 13,85 | JUL 16,85 | <T 0.03 | 0.31 | 0.020 | <T 0.015 | <T 0.015 | 0.240 | 0.010 |
| SEP 10,85 | AUG 13,85 | 0.08 | 0.34 | 0.020 | 0.035 | 0.035 | 0.260 | D 0.009 |
| OCT 8,85 | SEP 10,85 | <T 0.04 | 0.14 | <T 0.005 | <W 0.005 | <T 0.020 | 0.130 | <T 0.003 |
| NOV 5,85 | OCT 8,85 | <T 0.04 | 0.17 | <T 0.015 | <T 0.005 | 0.035 | 0.125 | 0.010 |
| DEC 3,85 | NOV 5,85 | <T 0.06 | 0.19 | 0.035 | <T 0.010 | 0.050 | 0.080 | <T 0.003 |
| DEC 31,85 | DEC 3,85 | 0.15 | 0.14 | <T 0.015 | <T 0.005 | 0.125 | 0.035 | 0.010 |

| REMOVAL DATE | EXPOSURE DATE | MANGANSE MG/L | NICKEL MG/L | ZINC MG/L | IRON MG/L | LEAD MG/L | VANADIUM MG/L | ALUMINUM MG/L |
|-----------------|------------------|------------------|----------------|--------------|--------------|--------------|------------------|------------------|
| JAN 29,85 | JAN 2,85 | 0.002 | 0.0003 | 0.006 | 0.035 | 0.005 | < 0.0004 | 0.049 |
| FEB 26,85 | JAN 29,85 | 0.002 | 0.0002 | 0.006 | 0.045 | 0.011 | < 0.0004 | 0.075 |
| MAR 26,85 | FEB 26,85 | 0.003 | < 0.0002 | UG 0.029 | 0.087 | UG 0.022 | < 0.0004 | 0.073 |
| APR 23,85 | MAR 26,85 | 0.008 | < 0.0002 | 0.004 | 0.090 | 0.008 | < 0.0004 | 0.093 |
| MAY 21,85 | APR 23,85 | 0.006 | 0.0004 | 0.003 | 0.058 | 0.002 | < 0.0004 | 0.054 |
| JUN 18,85 | MAY 21,85 | 0.003 | < 0.0002 | 0.003 | 0.037 | 0.006 | < 0.0004 | 0.033 |
| JUL 16,85 | JUN 18,85 | 0.007 | 0.0002 | 0.005 | 0.069 | 0.001 | < 0.0004 | 0.077 |
| AUG 13,85 | JUL 16,85 | 0.002 | < 0.0002 | 0.005 | 0.035 | 0.002 | < 0.0004 | 0.022 |
| SEP 10,85 | AUG 13,85 | 0.002 | < 0.0002 | 0.002 | 0.030 | 0.006 | < 0.0004 | 0.031 |
| OCT 8,85 | SEP 10,85 | < 0.001 | < 0.0002 | 0.001 | 0.003 | 0.002 | < 0.0004 | 0.009 |
| NOV 5,85 | OCT 8,85 | < 0.001 | 0.0003 | 0.002 | 0.009 | 0.001 | < 0.0004 | 0.012 |
| DEC 3,85 | NOV 5,85 | 0.001 | 0.0005 | 0.006 | 0.023 | 0.002 | < 0.0004 | 0.020 |
| DEC 31,85 | DEC 3,85 | 0.001 | 0.0004 | 0.002 | 0.019 | < 0.004 | < 0.0004 | 0.030 |

ONTARIO MINISTRY OF THE ENVIRONMENT
 CUMULATIVE SAMPLING ANALYSIS RESULTS
 APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : DORION/CUMULATIVE PRECIP.

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PAGE : 3

| REMOVAL DATE | EXPOSURE DATE | COPPER MG/L | CADMIUM MG/L | FREE H+ MG/L |
|-----------------|------------------|----------------|-----------------|-----------------|
| JAN 29,85 | JAN 2,85 | 0.0005 | < 0.00002 | 0.0158 |
| FEB 26,85 | JAN 29,85 | 0.0026 | 0.00004 | 0.0363 |
| MAR 26,85 | FEB 26,85 | UG 0.0119 | 0.00004 | 0.0066 |
| APR 23,85 | MAR 26,85 | 0.0031 | 0.00007 | LG 0.0005 |
| MAY 21,85 | APR 23,85 | 0.0002 | 0.00006 | 0.0209 |
| JUN 18,85 | MAY 21,85 | 0.0032 | < 0.00002 | 0.0178 |
| JUL 16,85 | JUN 18,85 | 0.0002 | 0.00005 | 0.0076 |
| AUG 13,85 | JUL 16,85 | < 0.0003 | 0.00003 | 0.0200 |
| SEP 10,85 | AUG 13,85 | 0.0013 | D 0.00005 | 0.0182 |
| OCT 8,85 | SEP 10,85 | < 0.0002 | 0.00003 | 0.0148 |
| NOV 5,85 | OCT 8,85 | < 0.0003 | 0.00003 | 0.0224 |
| DEC 3,85 | NOV 5,85 | D 0.0069 | 0.00024 | 0.0145 |
| DEC 31,85 | DEC 3,85 | 0.0009 | 0.00004 | 0.0263 |

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : EAR FALL'S/CUMULATIVE PRECIP.

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PAGE : 1

| REMOVAL DATE | EXPOSURE DATE | SAMPLING START HR. | END HR. | SAMPLE TYPE 01-RAIN 02-SNOW 03-COMP/04-OTHER | GAUGE DEPTH(MM) | GAUGE TYPE 02,03-APIOS 09-AES | SAMPLE NUMBER | PROJECT CODE 02-APIOS 03-SPECIAL | SUBPROJECT CODE 01-MOE 03-AES | SAMPLER EFFICI- ENCY (%) | COMMENTS FIELD OFFICE |
|-----------------|------------------|--------------------------|------------|--|--------------------|--|------------------|---|--|-----------------------------------|--------------------------|
| JAN 28,85 | JAN 2,85 | 900 | 1000 | 2 | 24.0 | 2 | 13582 | 2 | 1 | U 52 | FI |
| FEB 26,85 | JAN 29,85 | 900 | 905 | 2 | 9.1 | 2 | 13583 | 2 | 1 | U 66 | FM |
| MAR 26,85 | FEB 26,85 | 905 | 900 | 3 | 17.0 | 2 | 13584 | 2 | 1 | U 1 | FJI |
| APR 23,85 | MAR 26,85 | 900 | 930 | 1 | 28.7 | 2 | 13585 | 2 | 1 | 86 | H |
| MAY 21,85 | APR 23,85 | 930 | 900 | 1 | 94.8 | 2 | 13586 | 2 | 1 | 86 | HM |
| JUN 18,85 | MAY 21,85 | 900 | 1030 | 1 | 60.0 | 1 | 13587 | 2 | 1 | 90 | C |
| JUL 16,85 | JUN 18,85 | 1030 | 900 | 1 | 95.0 | 3 | 13588 | 2 | 1 | 88 | HM |
| AUG 13,85 | JUL 19,85 | 900 | 900 | 1 | 80.0 | 3 | 13590 | 2 | 1 | 50 | H |
| SEP 10,85 | AUG 13,85 | 900 | 900 | 1 | 100.0 | 3 | 13591 | 2 | 1 | 85 | C |
| OCT 8,85 | SEP 10,85 | 900 | 1130 | 3 | 78.9 | 3 | 13592 | 2 | 1 | U 41 | G |
| NOV 5,85 | OCT 8,85 | 1130 | 900 | 3 | 31.1 | 2 | 13593 | 2 | 1 | 62 | C |
| DEC 3,85 | NOV 5,85 | 900 | 900 | 2 | 50.5 | 2 | 13595 | 2 | 1 | 63 | AC |
| DEC 31,85 | DEC 3,85 | 900 | 855 | 2 | 20.1 | 9 | 13596 | 2 | 1 | I 50 | C |

| REMOVAL DATE | EXPOSURE DATE | VOLUME ML | CONDUCT. UMHO/CM | PH LAB | TOTAL H+ GRAN MG/L | SULPHATE MG/L | NITRATE AS N MG/L | CALCIUM MG/L |
|-----------------|------------------|--------------|---------------------|-----------|--------------------------|------------------|-------------------------|-----------------|
| JAN 28,85 | JAN 2,85 | 410.0 | 9.0 | 4.86 | 0.0319 | 0.60 | 0.13 | 0.11 |
| FEB 26,85 | JAN 29,85 | 196.0 | 13.4 | 4.66 | 0.0516 | 0.75 | 0.27 | 0.17 |
| MAR 26,85 | FEB 26,85 | 10.0 | 24.7 | 5.07 | 0.0356 | 2.80 | 0.88 | ***** |
| APR 23,85 | MAR 26,85 | 807.0 | 8.9 | 5.31 | 0.0257 | 1.35 | 0.24 | 0.33 |
| MAY 21,85 | APR 23,85 | 2649.0 | 6.2 | 5.74 | 0.0352 | 0.75 | 0.15 | 0.38 |
| JUN 18,85 | MAY 21,85 | 1761.0 | 5.8 | 6.07 | 0.0179 | 0.85 | 0.12 | 0.32 |
| JUL 16,85 | JUN 18,85 | 2738.0 | 5.6 | 5.25 | 0.0250 | 0.55 | 0.12 | 0.16 |
| AUG 13,85 | JUL 19,85 | 1317.0 | 9.2 | 4.82 | 0.0360 | 1.00 | 0.20 | 0.22 |
| SEP 10,85 | AUG 13,85 | 2786.0 | 5.7 | 5.26 | 0.0266 | 0.55 | 0.11 | 0.10 |
| OCT 8,85 | SEP 10,85 | 1066.0 | ***** | 5.31 | 0.0220 | ***** | ***** | LG 0.05 |
| NOV 5,85 | OCT 8,85 | 630.0 | 6.6 | B 5.64 | 0.0206 | 0.75 | 0.10 | 0.24 |
| DEC 3,85 | NOV 5,85 | 1037.0 | 6.7 | 5.41 | 0.0250 | 0.40 | 0.14 | 0.11 |
| DEC 31,85 | DEC 3,85 | 328.0 | 16.8 | 4.51 | 0.0566 | 0.90 | 0.30 | 0.06 |

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : EAR FALL'S/CUMULATIVE PRECIP.

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PAGE : 2

| REMOVAL DATE | EXPOSURE DATE | CHLORIDE MG/L | KJELDAHL AS N MG/L | MAGNESIM MG/L | POTASSIM MG/L | SODIUM MG/L | AMMONIUM AS N MG/L | PHOSPHOR MG/L |
|-----------------|------------------|------------------|--------------------------|------------------|------------------|----------------|--------------------------|------------------|
| JAN 28,85 | JAN 2,85 | 0.26 | 0.08 | <T 0.010 | <W 0.005 | 0.150 | <W 0.005 | 0.019 |
| FEB 26,85 | JAN 29,85 | 0.35 | 0.16 | <T 0.015 | <T 0.020 | 0.240 | 0.065 | 0.028 |
| MAR 26,85 | FEB 26,85 | UG 1.11 | ***** | ***** | ***** | ***** | 0.420 | ***** |
| APR 23,85 | MAR 26,85 | 0.12 | 0.38 | 0.035 | 0.030 | 0.120 | 0.335 | <T 0.004 |
| MAY 21,85 | APR 23,85 | <W 0.01 | 0.30 | 0.075 | 0.035 | 0.020 | 0.190 | 0.010 |
| JUN 18,85 | MAY 21,85 | <T 0.06 | 0.29 | 0.055 | 0.060 | 0.030 | 0.155 | 0.007 |
| JUL 16,85 | JUN 18,85 | <T 0.04 | 0.25 | 0.025 | 0.025 | 0.025 | 0.155 | <T 0.003 |
| AUG 13,85 | JUL 19,85 | 0.07 | 0.22 | 0.025 | 0.040 | 0.070 | 0.175 | <T 0.005 |
| SEP 10,85 | AUG 13,85 | <T 0.05 | 0.16 | <T 0.010 | 0.020 | <T 0.015 | 0.120 | <T 0.004 |
| OCT 8,85 | SEP 10,85 | ***** | LG 0.09 | <T 0.010 | <T 0.015 | 0.025 | LG 0.050 | <T 0.005 |
| NOV 5,85 | OCT 8,85 | 0.07 | 0.13 | 0.020 | <T 0.010 | 0.065 | 0.040 | 0.016 |
| DEC 3,85 | NOV 5,85 | 0.07 | 0.19 | <T 0.010 | 0.030 | 0.045 | 0.065 | 0.012 |
| DEC 31,85 | DEC 3,85 | 0.18 | 0.10 | 0.015 | <T 0.010 | 0.145 | <T 0.010 | 0.011 |

| REMOVAL DATE | EXPOSURE DATE | MANGANSE MG/L | NICKEL MG/L | ZINC MG/L | IRON MG/L | LEAD MG/L | VANADIUM MG/L | ALUMINUM MG/L |
|-----------------|------------------|------------------|----------------|--------------|--------------|--------------|------------------|------------------|
| JAN 28,85 | JAN 2,85 | 0.004 | 0.0004 | 0.006 | 0.067 | < 0.003 | < 0.0004 | 0.069 |
| FEB 26,85 | JAN 29,85 | ***** | ***** | ***** | ***** | ***** | ***** | ***** |
| MAR 26,85 | FEB 26,85 | ***** | ***** | ***** | ***** | ***** | ***** | ***** |
| APR 23,85 | MAR 26,85 | 0.004 | < 0.0002 | 0.005 | 0.093 | 0.009 | < 0.0004 | 0.075 |
| MAY 21,85 | APR 23,85 | 0.007 | < 0.0002 | 0.002 | 0.101 | 0.002 | < 0.0004 | 0.081 |
| JUN 18,85 | MAY 21,85 | 0.005 | < 0.0002 | 0.002 | 0.051 | 0.007 | < 0.0004 | 0.040 |
| JUL 16,85 | JUN 18,85 | 0.003 | < 0.0002 | 0.003 | 0.022 | 0.001 | < 0.0004 | 0.028 |
| AUG 13,85 | JUL 19,85 | 0.003 | < 0.0002 | 0.005 | 0.033 | 0.005 | < 0.0004 | 0.033 |
| SEP 10,85 | AUG 13,85 | 0.001 | < 0.0002 | 0.003 | 0.018 | 0.003 | < 0.0004 | 0.020 |
| OCT 8,85 | SEP 10,85 | < 0.001 | < 0.0002 | 0.001 | 0.021 | 0.007 | < 0.0004 | 0.016 |
| NOV 5,85 | OCT 8,85 | 0.001 | 0.0002 | 0.003 | 0.030 | 0.009 | < 0.0004 | 0.039 |
| DEC 3,85 | NOV 5,85 | 0.002 | 0.0004 | 0.006 | 0.038 | < 0.002 | < 0.0004 | 0.030 |
| DEC 31,85 | DEC 3,85 | 0.002 | 0.0030 | 0.005 | 0.071 | < 0.004 | < 0.0004 | 0.042 |

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : EAR FALL'S/CUMULATIVE PRECIP.

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PAGE : 3

| REMOVAL DATE | EXPOSURE DATE | COPPER MG/L | CADMIUM MG/L | FREE H+ MG/L |
|-----------------|------------------|----------------|-----------------|-----------------|
| JAN 28,85 | JAN 2,85 | 0.0005 | 0.00010 | 0.0138 |
| FEB 26,85 | JAN 29,85 | ***** | ***** | 0.0219 |
| MAR 26,85 | FEB 26,85 | ***** | ***** | 0.0085 |
| APR 23,85 | MAR 26,85 | 0.0019 | 0.00012 | 0.0049 |
| MAY 21,85 | APR 23,85 | 0.0002 | < 0.00002 | 0.0018 |
| JUN 18,85 | MAY 21,85 | < 0.0011 | 0.00002 | 0.0009 |
| JUL 16,85 | JUN 18,85 | 0.0012 | 0.00003 | 0.0056 |
| AUG 13,85 | JUL 19,85 | 0.0003 | 0.00003 | 0.0151 |
| SEP 10,85 | AUG 13,85 | 0.0004 | 0.00002 | 0.0055 |
| OCT 8,85 | SEP 10,85 | 0.0005 | 0.00002 | 0.0049 |
| NOV 5,85 | OCT 8,85 | 0.0022 | 0.00005 | B 0.0023 |
| DEC 3,85 | NOV 5,85 | 0.0005 | B 0.00360 | 0.0039 |
| DEC 31,85 | DEC 3,85 | 0.0012 | 0.00007 | 0.0309 |

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : EXP. LAKES AREA/CUMULATIVE PRECIP. #34

PAGE : 1

| REMOVAL DATE | EXPOSURE DATE | SAMPLING START HR. | SAMPLING END HR. | SAMPLE TYPE 01-RAIN 02-SNOW 03-COMP/04-OTHER | GAUGE DEPTH(MM) | GAUGE TYPE 02,03-APIOS 09-AES | SAMPLE NUMBER | PROJECT CODE 02-APIOS 03-SPECIAL | SUBPROJECT CODE 01-MOE 03-AES | SAMPLER EFFICI- ENCY (%) | COMMENTS FIELD OFFICE |
|-----------------|------------------|--------------------------|------------------------|--|--------------------|--|------------------|---|--|-----------------------------------|--------------------------|
| JAN 31,85 | JAN 2,85 | 800 | 1110 | 2 | 17.9 | 2 | 13193 | 2 | 1 | 56 | |
| FEB 26,85 | JAN 31,85 | 1110 | 800 | 2 | 22.5 | 2 | 13194 | 2 | 1 | U 39 | F |
| MAR 26,85 | FEB 26,85 | 800 | 830 | 3 | 5.6 | 2 | 13195 | 2 | 1 | 51 | |
| APR 23,85 | MAR 26,85 | 830 | 830 | 3 | 104.8 | 2 | 13196 | 2 | 1 | 85 | |
| MAY 21,85 | APR 23,85 | 830 | 830 | 1 | 111.4 | 1 | 13198 | 2 | 1 | U 103 | CF C |
| JUN 18,85 | MAY 21,85 | 830 | 930 | 1 | 160.0 | 1 | 13199 | 2 | 1 | 36 | AC MC |
| JUL 16,85 | JUN 18,85 | 930 | 900 | 1 | 79.0 | 3 | 13200 | 2 | 1 | 87 | AC HCM |
| AUG 13,85 | JUL 16,85 | 900 | 900 | 1 | 82.0 | 3 | 13201 | 2 | 1 | 88 | C |
| SEP 10,85 | AUG 13,85 | 900 | 1000 | 1 | 95.0 | 3 | 13202 | 2 | 1 | U 24 | ACG |
| OCT 8,85 | SEP 10,85 | 1000 | 1000 | 3 | 136.3 | 3 | 13203 | 2 | 1 | 75 | CD C |
| NOV 5,85 | OCT 8,85 | 1000 | 930 | 3 | 15.8 | 2 | 13204 | 2 | 1 | 67 | |
| DEC 3,85 | NOV 5,85 | 930 | 1000 | 2 | 43.7 | 2 | 13206 | 2 | 1 | 20 | NH |
| DEC 31,85 | DEC 3,85 | 1000 | 900 | 2 | 17.6 | 2 | 13207 | 2 | 1 | 20 | N |

| REMOVAL DATE | EXPOSURE DATE | VOLUME ML | CONDUCT. UMHO/CM | PH LAB | TOTAL H+ GRAN MG/L | SULPHATE MG/L | NITRATE AS N MG/L | CALCIUM MG/L |
|-----------------|------------------|--------------|---------------------|-----------|--------------------------|------------------|-------------------------|-----------------|
| JAN 31,85 | JAN 2,85 | 328.0 | 11.3 | 4.74 | 0.0380 | 0.70 | 0.23 | <T 0.14 |
| FEB 26,85 | JAN 31,85 | 289.0 | 14.4 | 4.65 | 0.0509 | 0.90 | 0.40 | 0.15 |
| MAR 26,85 | FEB 26,85 | 94.0 | 25.3 | 4.68 | 0.0519 | 2.40 | 0.83 | ***** |
| APR 23,85 | MAR 26,85 | 2910.0 | 8.6 | UG 6.10 | 0.0224 | 1.35 | 0.22 | 0.28 |
| MAY 21,85 | APR 23,85 | 3748.0 | 6.5 | 6.21 | 0.0187 | 0.75 | 0.17 | 0.36 |
| JUN 18,85 | MAY 21,85 | 1917.0 | 9.9 | 6.11 | 0.0188 | 1.25 | 0.20 | 0.37 |
| JUL 16,85 | JUN 18,85 | 2233.0 | 5.9 | 5.48 | LG 0.0122 | 0.60 | 0.14 | 0.22 |
| AUG 13,85 | JUL 16,85 | 2362.0 | 12.6 | 5.14 | 0.0236 | 0.90 | 0.25 | 0.20 |
| SEP 10,85 | AUG 13,85 | 744.0 | 5.7 | 5.31 | 0.0262 | 0.55 | 0.12 | 0.14 |
| OCT 8,85 | SEP 10,85 | 3338.0 | 6.9 | 5.73 | 0.0226 | 0.90 | 0.14 | 0.12 |
| NOV 5,85 | OCT 8,85 | 346.0 | 12.5 | 4.71 | 0.0396 | 1.00 | 0.19 | 0.09 |
| DEC 3,85 | NOV 5,85 | 292.0 | 12.4 | 5.05 | 0.0306 | 1.25 | 0.35 | 0.22 |
| DEC 31,85 | DEC 3,85 | 118.0 | 21.0 | 4.48 | UG 0.0652 | 1.20 | 0.52 | 0.27 |

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : EXP. LAKES AREA/CUMULATIVE PRECIP. #34

PAGE : 2

| REMOVAL DATE | EXPOSURE DATE | CHLORIDE MG/L | KJELDAHL AS N MG/L | MAGNESIM MG/L | POTASSIM MG/L | SODIUM MG/L | AMMONIUM AS N MG/L | PHOSPHOR MG/L |
|-----------------|------------------|------------------|--------------------------|------------------|------------------|----------------|--------------------------|------------------|
| JAN 31,85 | JAN 2,85 | 0.16 | D 0.19 | <T 0.015 | <T 0.020 | 0.110 | 0.060 | 0.027 |
| FEB 26,85 | JAN 31,85 | 0.20 | 0.32 | <T 0.015 | <T 0.015 | 0.175 | 0.230 | 0.031 |
| MAR 26,85 | FEB 26,85 | 0.39 | 0.87 | ***** | ***** | ***** | 0.710 | 0.041 |
| APR 23,85 | MAR 26,85 | 0.09 | 0.54 | 0.025 | 0.035 | 0.090 | 0.480 | 0.007 |
| MAY 21,85 | APR 23,85 | <W 0.01 | 0.40 | 0.065 | 0.030 | <T 0.015 | 0.220 | 0.016 |
| JUN 18,85 | MAY 21,85 | <T 0.03 | 0.48 | 0.060 | 0.045 | 0.045 | 0.305 | 0.013 |
| JUL 16,85 | JUN 18,85 | <T 0.04 | 0.29 | 0.035 | 0.035 | 0.020 | 0.160 | <T 0.005 |
| AUG 13,85 | JUL 16,85 | 0.05 | 0.33 | 0.020 | 0.020 | 0.025 | 0.275 | 0.008 |
| SEP 10,85 | AUG 13,85 | <T 0.05 | 0.19 | <T 0.010 | <T 0.020 | <T 0.015 | 0.155 | <T 0.005 |
| OCT 8,85 | SEP 10,85 | <T 0.06 | 0.36 | <T 0.015 | <T 0.020 | 0.035 | 0.340 | <T 0.005 |
| NOV 5,85 | OCT 8,85 | 0.13 | 0.18 | 0.020 | <T 0.010 | 0.115 | 0.055 | 0.014 |
| DEC 3,85 | NOV 5,85 | 0.16 | D 0.40 | 0.045 | 0.035 | 0.120 | D 0.275 | 0.019 |
| DEC 31,85 | DEC 3,85 | 0.35 | 0.14 | 0.020 | 0.025 | 0.280 | 0.050 | 0.059 |

| REMOVAL DATE | EXPOSURE DATE | MANGANSE MG/L | NICKEL MG/L | ZINC MG/L | IRON MG/L | LEAD MG/L | VANADIUM MG/L | ALUMINUM MG/L |
|-----------------|------------------|------------------|----------------|--------------|--------------|--------------|------------------|------------------|
| JAN 31,85 | JAN 2,85 | 0.002 | 0.0004 | 0.006 | 0.060 | 0.013 | < 0.0004 | 0.053 |
| FEB 26,85 | JAN 31,85 | 0.002 | 0.0009 | 0.011 | 0.053 | 0.012 | < 0.0004 | 0.070 |
| MAR 26,85 | FEB 26,85 | ***** | ***** | ***** | ***** | ***** | ***** | ***** |
| APR 23,85 | MAR 26,85 | 0.003 | 0.0002 | 0.005 | 0.059 | 0.011 | < 0.0004 | 0.079 |
| MAY 21,85 | APR 23,85 | 0.011 | 0.0006 | 0.002 | 0.179 | 0.002 | 0.0004 | 0.179 |
| JUN 18,85 | MAY 21,85 | 0.008 | 0.0002 | 0.002 | 0.067 | 0.003 | D 0.0005 | 0.059 |
| JUL 16,85 | JUN 18,85 | 0.004 | < 0.0002 | 0.001 | 0.046 | 0.001 | < 0.0004 | 0.049 |
| AUG 13,85 | JUL 16,85 | 0.003 | D 0.0005 | 0.003 | 0.020 | 0.001 | < 0.0004 | 0.023 |
| SEP 10,85 | AUG 13,85 | 0.001 | 0.0002 | 0.005 | 0.016 | 0.003 | < 0.0004 | 0.029 |
| OCT 8,85 | SEP 10,85 | 0.002 | 0.0002 | 0.004 | 0.015 | 0.002 | < 0.0004 | 0.019 |
| NOV 5,85 | OCT 8,85 | 0.001 | D 0.0012 | B 0.021 | 0.029 | 0.005 | < 0.0004 | 0.035 |
| DEC 3,85 | NOV 5,85 | D 0.005 | 0.0002 | 0.004 | 0.078 | < 0.004 | < 0.0004 | 0.047 |
| DEC 31,85 | DEC 3,85 | ***** | ***** | ***** | ***** | ***** | ***** | ***** |

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : EXP. LAKES AREA/CUMULATIVE PRECIP. 834

PAGE : 3

| REMOVAL DATE | EXPOSURE DATE | COPPER MG/L | CADMIUM MG/L | FREE H+ MG/L |
|-----------------|------------------|----------------|-----------------|-----------------|
| JAN 31,85 | JAN 2,85 | 0.0020 | 0.00004 | 0.0182 |
| FEB 26,85 | JAN 31,85 | 0.0049 | D 0.00018 | 0.0224 |
| MAR 26,85 | FEB 26,85 | ***** | ***** | 0.0209 |
| APR 23,85 | MAR 26,85 | 0.0012 | 0.00007 | LG 0.0008 |
| MAY 21,85 | APR 23,85 | < 0.0003 | 0.00005 | 0.0006 |
| JUN 18,85 | MAY 21,85 | < 0.0011 | 0.00004 | 0.0008 |
| JUL 16,85 | JUN 18,85 | 0.0004 | 0.00003 | 0.0033 |
| AUG 13,85 | JUL 16,85 | 0.0003 | 0.00002 | 0.0072 |
| SEP 10,85 | AUG 13,85 | 0.0003 | 0.00002 | 0.0049 |
| OCT 8,85 | SEP 10,85 | 0.0004 | 0.00004 | 0.0019 |
| NOV 5,85 | OCT 8,85 | 0.0009 | 0.00007 | 0.0195 |
| DEC 3,85 | NOV 5,85 | 0.0005 | 0.00004 | 0.0089 |
| DEC 31,85 | DEC 3,85 | ***** | ***** | 0.0331 |

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : GERALDTON/CUMULATIVE PRECIP.

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PAGE : 1

| REMOVAL DATE | EXPOSURE DATE | SAMPLING START HR. | END HR. | SAMPLE TYPE 01-RAIN 02-SNOW 03-COMP/04-OTHER | GAUGE DEPTH(MM) | GAUGE TYPE 02,03-APIOS 09-AES | SAMPLE NUMBER | PROJECT CODE 02-APIOS 03-SPECIAL | SUBPROJECT CODE 01-MOE 03-AES | SAMPLER EFFICI- ENCY (%) | COMMENTS FIELD OFFICE |
|-----------------|------------------|--------------------------|------------|--|--------------------|--|------------------|---|--|-----------------------------------|--------------------------|
| JAN 29,85 | JAN 2,85 | 1320 | 815 | 2 | 15.8 | 2 | 13327 | 2 | 1 | 42 | N |
| FEB 26,85 | JAN 29,85 | 815 | 1830 | 2 | 24.8 | 2 | 13329 | 2 | 1 | 43 | N |
| MAR 26,85 | FEB 26,85 | 1830 | 1430 | 2 | 16.8 | 2 | 13330 | 2 | 1 | 3 | N |
| APR 24,85 | MAR 26,85 | 1430 | 1120 | 1 | 20.1 | 2 | 13331 | 2 | 1 | 58 | |
| MAY 21,85 | APR 24,85 | 1120 | 1100 | 1 | 73.8 | 2 | 13332 | 2 | 1 | 83 | AC |
| JUN 18,85 | MAY 21,85 | 1100 | 1035 | 1 | 70.0 | 1 | 13333 | 2 | 1 | 77 | C |
| JUL 16,85 | JUN 18,85 | 1035 | 1000 | 1 | 45.0 | 3 | 13334 | 2 | 1 | U 46 | GC HM |
| SEP 10,85 | AUG 13,85 | 1015 | 815 | 1 | 58.0 | 3 | 13336 | 2 | 1 | U 60 | AFJ |
| OCT 7,85 | SEP 10,85 | 815 | 815 | 1 | 157.0 | 3 | 13338 | 2 | 1 | U 83 | ABDCF C |
| NOV 5,85 | OCT 7,85 | 815 | 1030 | 3 | 78.1 | 2 | 13339 | 2 | 1 | U 53 | G |
| DEC 3,85 | NOV 5,85 | 1030 | 925 | 2 | 46.9 | 3 | 13340 | 2 | 1 | U 34 | CFJ |
| JAN 1,86 | DEC 3,85 | 925 | 1130 | 2 | 40.9 | 2 | 13341 | 2 | 1 | 22 | N |

| REMOVAL DATE | EXPOSURE DATE | VOLUME ML | CONDUCT. UMHO/CM | PH LAB | TOTAL H+ GRAM MG/L | SULPHATE MG/L | NITRATE AS N MG/L | CALCIUM MG/L |
|-----------------|------------------|--------------|---------------------|-----------|--------------------------|------------------|-------------------------|-----------------|
| JAN 29,85 | JAN 2,85 | 216.0 | 9.1 | 4.81 | 0.0354 | 0.55 | 0.13 | 0.10 |
| FEB 26,85 | JAN 29,85 | 353.0 | 11.0 | 4.80 | 0.0395 | 0.75 | 0.22 | 0.11 |
| MAR 26,85 | FEB 26,85 | 19.0 | 15.8 | 4.84 | 0.0422 | 1.50 | 0.42 | ***** |
| APR 24,85 | MAR 26,85 | 384.0 | 18.6 | 4.90 | 0.0368 | 2.95 | 0.49 | UG 0.60 |
| MAY 21,85 | APR 24,85 | 1998.0 | 18.0 | 4.55 | 0.0517 | 2.35 | 0.26 | 0.31 |
| JUN 18,85 | MAY 21,85 | 1761.0 | 8.2 | 5.13 | 0.0272 | 1.30 | 0.14 | 0.19 |
| JUL 16,85 | JUN 18,85 | 673.0 | 6.4 | 5.53 | 0.0230 | 0.90 | 0.10 | 0.31 |
| SEP 10,85 | AUG 13,85 | 1141.0 | 10.4 | 4.87 | 0.0365 | 0.95 | 0.18 | 0.13 |
| OCT 7,85 | SEP 10,85 | 4264.0 | 14.5 | 5.97 | 0.0231 | 1.40 | 0.22 | D 0.21 |
| NOV 5,85 | OCT 7,85 | 1346.0 | 11.8 | 4.74 | 0.0372 | 1.10 | 0.19 | 0.19 |
| DEC 3,85 | NOV 5,85 | 531.0 | 9.7 | 4.98 | 0.0310 | 0.80 | 0.19 | 0.14 |
| JAN 1,86 | DEC 3,85 | 298.0 | 11.6 | 4.76 | 0.0425 | 0.70 | 0.17 | 0.08 |

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : GERALDTON/CUMULATIVE PRECIP.

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PAGE : 2

| REMOVAL DATE | EXPOSURE DATE | CHLORIDE MG/L | KJELDAHL AS N MG/L | MAGNESIM MG/L | POTASSIM MG/L | SODIUM MG/L | AMMONIUM AS N MG/L | PHOSPHOR MG/L |
|-----------------|------------------|------------------|--------------------------|------------------|------------------|----------------|--------------------------|------------------|
| JAN 29,85 | JAN 2,85 | 0.23 | 0.08 | <T 0.010 | <T 0.005 | 0.130 | 0.020 | 0.039 |
| FEB 26,85 | JAN 29,85 | 0.22 | 0.20 | <T 0.015 | <T 0.010 | 0.150 | 0.145 | 0.039 |
| MAR 26,85 | FEB 26,85 | UG 0.63 | ***** | ***** | ***** | ***** | 0.160 | ***** |
| APR 24,85 | MAR 26,85 | 0.27 | 0.83 | 0.070 | 0.050 | 0.250 | 0.655 | 0.022 |
| MAY 21,85 | APR 24,85 | 0.03 | 0.48 | 0.050 | 0.030 | 0.030 | 0.385 | 0.008 |
| JUN 18,85 | MAY 21,85 | 0.07 | 0.31 | 0.030 | 0.055 | D 0.110 | 0.170 | 0.012 |
| JUL 16,85 | JUN 18,85 | 0.13 | UG 1.18 | 0.050 | D 0.140 | 0.155 | 0.140 | 0.018 |
| SEP 10,85 | AUG 13,85 | <T 0.06 | 0.19 | <T 0.010 | 0.025 | 0.025 | 0.150 | <T 0.005 |
| OCT 7,85 | SEP 10,85 | 0.07 | 0.68 | D 0.030 | D 0.065 | 0.055 | 0.445 | D 0.063 |
| NOV 5,85 | OCT 7,85 | <T 0.04 | 0.21 | 0.025 | <T 0.015 | 0.055 | 0.115 | <T 0.002 |
| DEC 3,85 | NOV 5,85 | 0.24 | 0.27 | 0.020 | 0.080 | 0.175 | 0.090 | 0.007 |
| JAN 1,86 | DEC 3,85 | 0.28 | 0.42 | <T 0.015 | <T 0.010 | 0.205 | <W 0.005 | 0.015 |

| REMOVAL DATE | EXPOSURE DATE | MANGANSE MG/L | NICKEL MG/L | ZINC MG/L | IRON MG/L | LEAD MG/L | VANADIUM MG/L | ALUMINUM MG/L |
|-----------------|------------------|------------------|----------------|--------------|--------------|--------------|------------------|------------------|
| JAN 29,85 | JAN 2,85 | 0.001 | 0.0002 | < 0.011 | 0.014 | 0.010 | < 0.0004 | 0.039 |
| FEB 26,85 | JAN 29,85 | 0.001 | 0.0002 | 0.006 | 0.018 | 0.010 | < 0.0004 | 0.065 |
| MAR 26,85 | FEB 26,85 | ***** | ***** | ***** | ***** | ***** | ***** | ***** |
| APR 24,85 | MAR 26,85 | 0.007 | < 0.0002 | 0.009 | 0.129 | 0.012 | 0.0004 | D 0.164 |
| MAY 21,85 | APR 24,85 | 0.006 | 0.0003 | 0.003 | 0.058 | 0.004 | < 0.0004 | 0.058 |
| JUN 18,85 | MAY 21,85 | 0.005 | 0.0004 | 0.001 | 0.055 | 0.001 | < 0.0004 | 0.054 |
| JUL 16,85 | JUN 18,85 | 0.003 | 0.0003 | 0.013 | 0.060 | 0.003 | < 0.0004 | 0.049 |
| SEP 10,85 | AUG 13,85 | 0.001 | 0.0002 | 0.002 | 0.014 | 0.006 | < 0.0004 | 0.015 |
| OCT 7,85 | SEP 10,85 | 0.003 | 0.0002 | 0.016 | D 0.051 | 0.004 | < 0.0004 | 0.033 |
| NOV 5,85 | OCT 7,85 | 0.002 | 0.0003 | 0.002 | 0.032 | 0.004 | < 0.0004 | 0.041 |
| DEC 3,85 | NOV 5,85 | 0.001 | 0.0007 | 0.007 | 0.056 | < 0.003 | < 0.0004 | 0.037 |
| JAN 1,86 | DEC 3,85 | 0.001 | 0.0014 | 0.004 | 0.026 | 0.003 | < 0.0004 | 0.031 |

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ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : GERALDTON/CUMULATIVE PRECIP.

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PAGE 1 3

| REMOVAL DATE | EXPOSURE DATE | COPPER MG/L | CADMIUM MG/L | FREE H+ MG/L |
|-----------------|------------------|----------------|-----------------|-----------------|
| JAN 29,85 | JAN 2,85 | 0.0007 | 0.00002 | 0.0155 |
| FEB 26,85 | JAN 29,85 | 0.0022 | 0.00003 | 0.0158 |
| MAR 26,85 | FEB 26,85 | ***** | ***** | 0.0145 |
| APR 24,85 | MAR 26,85 | 0.0060 | 0.00017 | 0.0126 |
| MAY 21,85 | APR 24,85 | 0.0003 | 0.00007 | 0.0282 |
| JUN 18,85 | MAY 21,85 | < 0.0011 | 0.00003 | 0.0074 |
| JUL 16,85 | JUN 18,85 | 0.0012 | D 0.00019 | 0.0030 |
| SEP 10,85 | AUG 13,85 | 0.0002 | 0.00002 | 0.0135 |
| OCT 7,85 | SEP 10,85 | D 0.0011 | D 0.00009 | 0.0011 |
| NOV 5,85 | OCT 7,85 | 0.0018 | D 0.00012 | 0.0182 |
| DEC 3,85 | NOV 5,85 | 0.0009 | UG 0.00118 | 0.0105 |
| JAN 1,86 | DEC 3,85 | 0.0021 | 0.00013 | 0.0174 |

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : LAC LA CROIX/CUMULATIVE PRECIP.

#33

PAGE : 1

| REMOVAL DATE | EXPOSURE DATE | SAMPLING START HR. | END HR. | SAMPLE TYPE 01-RAIN 02-SNOW 03-COMP/04-OTHER | GAUGE DEPTH(MM) | GAUGE TYPE 02,03-APIOS 09-AES | SAMPLE NUMBER | PROJECT CODE 02-APIOS 03-SPECIAL | SUBPROJECT CODE 01-MOE 03-AES | SAMPLER EFFICI- ENCY (%) | COMMENTS FIELD OFFICE |
|-----------------|------------------|--------------------------|------------|--|--------------------|--|------------------|---|--|-----------------------------------|--------------------------|
| JAN 28,85 | JAN 2,85 | 900 | 700 | 2 | 33.6 | 3 | 95073 | 2 | 1 | 25 | N |
| FEB 26,85 | JAN 29,85 | 900 | 900 | 2 | 21.0 | 9 | 95074 | 2 | 1 | U 97 | FBQ |
| MAR 26,85 | FEB 26,85 | 900 | 900 | 2 | 23.8 | 9 | 95075 | 2 | 1 | U 26 | FB |
| APR 23,85 | MAR 26,85 | 900 | 900 | 1 | 98.6 | 3 | 95076 | 2 | 1 | 99 | AC |
| MAY 21,85 | APR 23,85 | 900 | 900 | 1 | 109.6 | 1 | 95077 | 2 | 1 | U 85 | ACG |
| JUN 18,85 | MAY 21,85 | 900 | 900 | 1 | 60.7 | 9 | 95079 | 2 | 1 | U 71 | CG |
| JUL 16,85 | JUN 18,85 | 900 | 900 | 1 | 144.8 | 9 | 95080 | 2 | 1 | U 60 | G |
| AUG 13,85 | JUL 16,85 | 900 | 900 | 1 | 43.0 | 3 | 95081 | 2 | 1 | 135 | C |
| OCT 8,85 | AUG 13,85 | 900 | 900 | 1 | ***** | N | 95082 | 2 | 1 | *** | BCQ |
| NOV 5,85 | OCT 8,85 | 900 | 900 | 3 | 32.4 | 9 | 95083 | 2 | 1 | I 80 | CD |
| DEC 3,85 | NOV 5,85 | 900 | 900 | 3 | 68.1 | 2 | 95084 | 2 | 1 | 53 | C |
| DEC 31,85 | DEC 3,85 | 900 | 900 | 2 | 12.0 | 2 | 95085 | 2 | 1 | U 47 | G |

| REMOVAL DATE | EXPOSURE DATE | VOLUME ML | CONDUCT. UMHO/CM | PH LAB | TOTAL H+ GRAN MG/L | SULPHATE MG/L | NITRATE AS N MG/L | CALCIUM MG/L |
|-----------------|------------------|--------------|---------------------|-----------|--------------------------|------------------|-------------------------|-----------------|
| JAN 28,85 | JAN 2,85 | 275.0 | 9.3 | 4.76 | 0.0408 | 0.70 | 0.24 | D 0.19 |
| FEB 26,85 | JAN 29,85 | 668.0 | ***** | 4.87 | 0.0400 | ***** | ***** | ***** |
| MAR 26,85 | FEB 26,85 | 203.0 | 18.9 | 4.96 | 0.0426 | 1.60 | 0.46 | 0.43 |
| APR 23,85 | MAR 26,85 | 3172.0 | 6.5 | UG 6.23 | 0.0221 | 0.80 | 0.15 | 0.18 |
| MAY 21,85 | APR 23,85 | 3033.0 | 15.5 | 6.09 | 0.0186 | 1.70 | 0.30 | D 0.59 |
| JUN 18,85 | MAY 21,85 | 1403.0 | 10.0 | 5.11 | 0.0321 | 1.25 | 0.25 | 0.36 |
| JUL 16,85 | JUN 18,85 | 2857.0 | 10.0 | 5.13 | 0.0282 | 1.30 | 0.26 | 0.38 |
| AUG 13,85 | JUL 16,85 | 1891.0 | 10.3 | 4.89 | 0.0434 | 0.95 | 0.24 | 0.22 |
| OCT 8,85 | AUG 13,85 | 3307.0 | U 100.0 | U 4.28 | U 2.2000 | U 12.50 | U 0.09 | U 5.40 |
| NOV 5,85 | OCT 8,85 | 851.0 | 9.7 | 5.06 | 0.0305 | 1.00 | 0.23 | 0.20 |
| DEC 3,85 | NOV 5,85 | 1190.0 | 10.4 | 4.72 | 0.0402 | 0.70 | 0.17 | 0.06 |
| DEC 31,85 | DEC 3,85 | 185.0 | 14.5 | 4.66 | 0.0494 | 0.80 | 0.31 | 0.15 |

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : LAC LA CROIX/CUMULATIVE PRECIP.

#33

PAGE 1 2

| REMOVAL DATE | EXPOSURE DATE | CHLORIDE MG/L | KJELDAHL AS N MG/L | MAGNESIM MG/L | POTASSIM MG/L | SODIUM MG/L | AMMONIUM AS N MG/L | PHOSPHOR MG/L |
|-----------------|------------------|------------------|--------------------------|------------------|------------------|----------------|--------------------------|------------------|
| JAN 28,85 | JAN 2,85 | 0.16 | ***** | 0.020 | 0.030 | 0.110 | 0.055 | ***** |
| FEB 26,85 | JAN 29,85 | ***** | ***** | ***** | ***** | ***** | ***** | ***** |
| MAR 26,85 | FEB 26,85 | UG 1.03 | 0.73 | 0.085 | 0.050 | B 0.970 | 0.425 | B 0.243 |
| APR 23,85 | MAR 26,85 | <W 0.01 | 0.52 | 0.030 | 0.050 | 0.025 | 0.375 | 0.015 |
| MAY 21,85 | APR 23,85 | D 0.07 | 0.60 | 0.105 | D 0.060 | D 0.085 | 0.360 | 0.025 |
| JUN 18,85 | MAY 21,85 | 0.07 | 0.26 | 0.060 | 0.040 | 0.060 | 0.210 | <T 0.003 |
| JUL 16,85 | JUN 18,85 | 0.14 | 0.29 | 0.065 | 0.070 | 0.085 | 0.210 | <T 0.003 |
| AUG 13,85 | JUL 16,85 | 0.09 | 0.31 | 0.025 | 0.040 | 0.030 | 0.180 | 0.008 |
| OCT 8,85 | AUG 13,85 | U 43.00 | U 27.20 | ***** | ***** | U 3.500 | U 1.740 | U 8.500 |
| NOV 5,85 | OCT 8,85 | <T 0.03 | 0.31 | 0.050 | 0.045 | 0.035 | 0.240 | <T 0.005 |
| DEC 3,85 | NOV 5,85 | <T 0.04 | 0.18 | 0.015 | <T 0.010 | 0.025 | 0.050 | <T 0.001 |
| DEC 31,85 | DEC 3,85 | 0.31 | 0.33 | 0.030 | 0.050 | 0.250 | <T 0.005 | 0.043 |

| REMOVAL DATE | EXPOSURE DATE | MANGANSE MG/L | NICKEL MG/L | ZINC MG/L | IRON MG/L | LEAD MG/L | VANADIUM MG/L | ALUMINUM MG/L |
|-----------------|------------------|------------------|----------------|--------------|--------------|--------------|------------------|------------------|
| JAN 28,85 | JAN 2,85 | 0.003 | 0.0038 | 0.010 | 0.101 | < 0.005 | 0.0004 | 0.079 |
| FEB 26,85 | JAN 29,85 | ***** | ***** | ***** | ***** | ***** | ***** | ***** |
| MAR 26,85 | FEB 26,85 | ***** | ***** | ***** | ***** | ***** | ***** | ***** |
| APR 23,85 | MAR 26,85 | 0.003 | 0.0002 | 0.003 | 0.031 | 0.004 | < 0.0004 | 0.054 |
| MAY 21,85 | APR 23,85 | UG 0.015 | < 0.0002 | 0.004 | UG 0.261 | 0.004 | D 0.0005 | 0.249 |
| JUN 18,85 | MAY 21,85 | 0.009 | < 0.0002 | 0.003 | D 0.120 | B 0.014 | < 0.0004 | 0.088 |
| JUL 16,85 | JUN 18,85 | 0.008 | < 0.0002 | 0.003 | 0.006 | 0.005 | < 0.0004 | 0.040 |
| AUG 13,85 | JUL 16,85 | 0.003 | < 0.0002 | 0.002 | 0.027 | < 0.002 | < 0.0004 | 0.029 |
| OCT 8,85 | AUG 13,85 | ***** | ***** | ***** | ***** | ***** | ***** | ***** |
| NOV 5,85 | OCT 8,85 | 0.005 | 0.0002 | 0.004 | D 0.079 | < 0.002 | < 0.0004 | D 0.077 |
| DEC 3,85 | NOV 5,85 | 0.001 | 0.0008 | 0.004 | 0.029 | 0.001 | < 0.0004 | 0.027 |
| DEC 31,85 | DEC 3,85 | 0.003 | 0.0017 | 0.006 | 0.075 | 0.005 | D 0.0008 | D 0.128 |

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ONTARIO MINISTRY OF THE ENVIRONMENT
 CUMULATIVE SAMPLING ANALYSIS RESULTS
 APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : LAC LA CROIX/CUMULATIVE PRECIP.

#33

PAGE : 3

| REMOVAL DATE | EXPOSURE DATE | COPPER MG/L | CADMIUM MG/L | FREE H+ MG/L |
|-----------------|------------------|----------------|-----------------|-----------------|
| JAN 28,85 | JAN 2,85 | 0.0012 | 0.00009 | 0.0174 |
| FEB 26,85 | JAN 29,85 | ***** | ***** | 0.0135 |
| MAR 26,85 | FEB 26,85 | ***** | ***** | 0.0110 |
| APR 23,85 | MAR 26,85 | < 0.0003 | 0.00003 | LG 0.0006 |
| MAY 21,85 | APR 23,85 | 0.0016 | < 0.00002 | 0.0008 |
| JUN 18,85 | MAY 21,85 | 0.0019 | < 0.00002 | 0.0078 |
| JUL 16,85 | JUN 18,85 | 0.0008 | < 0.00002 | 0.0074 |
| AUG 13,85 | JUL 16,85 | 0.0007 | 0.00003 | 0.0129 |
| OCT 8,85 | AUG 13,85 | ***** | ***** | U 0.0525 |
| NOV 5,85 | OCT 8,85 | 0.0007 | 0.00007 | 0.0087 |
| DEC 3,85 | NOV 5,85 | 0.0008 | 0.00010 | 0.0191 |
| DEC 31,85 | DEC 3,85 | 0.0015 | 0.00016 | 0.0219 |

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : OTTER ISLAND/CUMULATIVE PRECIP.

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PAGE : 1

| REMOVAL DATE | EXPOSURE DATE | SAMPLING START HR. | END HR. | SAMPLE TYPE 01-RAIN 02-SNOW 03-COMP/04-OTHER | GAUGE DEPTH(MM) | GAUGE TYPE 02,03-APIOS 09-AES | SAMPLE NUMBER | PROJECT CODE 02-APIOS 03-SPECIAL | SUBPROJECT CODE 01-MOE 03-AES | SAMPLER EFFICI- ENCY (%) | COMMENTS FIELD OFFICE |
|-----------------|------------------|--------------------------|------------|--|--------------------|--|------------------|---|--|-----------------------------------|--------------------------|
| MAY 21,85 | APR 23,85 | 1300 | 1045 | 1 | 58.0 | 3 | 31008 | 2 | 1 | 88 | AC |
| JUN 18,85 | MAY 21,85 | 1045 | 800 | 1 | 54.0 | 1 | 31009 | 2 | 1 | 92 | C |
| JUL 16,85 | JUN 18,85 | 800 | 915 | 1 | 41.0 | 3 | 31010 | 2 | 1 | 64 | |
| AUG 13,85 | JUL 16,85 | 915 | 800 | 1 | 109.0 | 3 | 31011 | 2 | 1 | 69 | |
| SEP 10,85 | AUG 13,85 | 800 | 800 | 1 | 78.0 | 3 | 31012 | 2 | 1 | 102 | |
| OCT 8,85 | SEP 10,85 | 800 | 820 | 1 | 144.2 | 3 | 31014 | 2 | 1 | U 74 | CDG |
| NOV 5,85 | OCT 8,85 | 830 | 800 | 3 | 166.9 | 3 | 31015 | 2 | 1 | 56 | D |

| REMOVAL DATE | EXPOSURE DATE | VOLUME ML | CONDUCT. UMHO/CM | PH LAB | TOTAL H+ GRAM MG/L | SULPHATE MG/L | NITRATE AS N MG/L | CALCIUM MG/L |
|-----------------|------------------|--------------|---------------------|-----------|--------------------------|------------------|-------------------------|-----------------|
| MAY 21,85 | APR 23,85 | 1675.0 | 26.0 | 4.39 | 0.0616 | 3.15 | 0.48 | 0.45 |
| JUN 18,85 | MAY 21,85 | 1613.0 | 17.6 | 4.62 | 0.0456 | 2.25 | 0.28 | 0.21 |
| JUL 16,85 | JUN 18,85 | 859.0 | 28.9 | 4.30 | 0.0863 | 3.50 | 0.47 | 0.34 |
| AUG 13,85 | JUL 16,85 | 2474.0 | 25.7 | 4.43 | 0.0637 | 2.95 | 0.30 | 0.06 |
| SEP 10,85 | AUG 13,85 | 2597.0 | 14.3 | 4.66 | 0.0419 | 1.40 | 0.21 | 0.18 |
| OCT 8,85 | SEP 10,85 | 3485.0 | 20.8 | 4.52 | 0.0570 | 2.20 | 0.29 | 0.28 |
| NOV 5,85 | OCT 8,85 | 3081.0 | 22.2 | 4.43 | 0.0619 | 2.05 | 0.36 | 0.18 |

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : OTTER ISLAND/CUMULATIVE PRECIP.

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PAGE : 2

| REMOVAL DATE | EXPOSURE DATE | CHLORIDE MG/L | KJELDAHL AS N MG/L | MAGNESIM MG/L | POTASSIM MG/L | SODIUM MG/L | AMMONIUM AS N MG/L | PHOSPHOR MG/L |
|-----------------|------------------|------------------|--------------------------|------------------|------------------|----------------|--------------------------|------------------|
| MAY 21,85 | APR 23,85 | 0.03 | 0.67 | 0.100 | 0.045 | 0.030 | 0.580 | 0.007 |
| JUN 18,85 | MAY 21,85 | <M 0.01 | 0.49 | 0.040 | 0.025 | 0.020 | 0.455 | <T 0.002 |
| JUL 16,85 | JUN 18,85 | 0.09 | 0.43 | 0.065 | 0.090 | D 0.070 | 0.465 | <T 0.003 |
| AUG 13,85 | JUL 16,85 | <T 0.05 | 0.50 | 0.030 | 0.025 | <T 0.015 | 0.415 | 0.010 |
| SEP 10,85 | AUG 13,85 | <T 0.05 | 0.21 | <T 0.015 | <T 0.015 | <T 0.020 | 0.185 | <T 0.004 |
| OCT 8,85 | SEP 10,85 | 0.10 | 0.27 | 0.025 | 0.020 | 0.055 | 0.240 | 0.007 |
| NOV 5,85 | OCT 8,85 | 0.07 | 0.26 | 0.030 | <T 0.015 | 0.040 | 0.230 | <T 0.004 |

| REMOVAL DATE | EXPOSURE DATE | MANGANSE MG/L | NICKEL MG/L | ZINC MG/L | IRON MG/L | LEAD MG/L | VANADIUM MG/L | ALUMINUM MG/L |
|-----------------|------------------|------------------|----------------|--------------|--------------|--------------|------------------|------------------|
| MAY 21,85 | APR 23,85 | 0.008 | 0.0004 | 0.010 | 0.108 | 0.007 | < 0.0004 | 0.146 |
| JUN 18,85 | MAY 21,85 | 0.003 | < 0.0002 | 0.004 | 0.039 | 0.007 | < 0.0004 | 0.034 |
| JUL 16,85 | JUN 18,85 | 0.007 | < 0.0002 | D 0.016 | 0.064 | 0.004 | < 0.0004 | 0.052 |
| AUG 13,85 | JUL 16,85 | 0.003 | 0.0010 | 0.011 | 0.025 | 0.005 | D 0.0005 | 0.045 |
| SEP 10,85 | AUG 13,85 | < 0.001 | < 0.0002 | 0.002 | 0.008 | 0.001 | < 0.0004 | 0.012 |
| OCT 8,85 | SEP 10,85 | 0.002 | 0.0002 | 0.006 | 0.008 | 0.006 | < 0.0004 | 0.012 |
| NOV 5,85 | OCT 8,85 | 0.003 | 0.0002 | 0.002 | 0.039 | 0.001 | < 0.0004 | 0.051 |

ONTARIO MINISTRY OF THE ENVIRONMENT
 CUMULATIVE SAMPLING ANALYSIS RESULTS
 APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

| STATION NAME : OTTER ISLAND/CUMULATIVE PRECIP. | | #38 | | |
|--|------------------|----------------|-----------------|-----------------|
| REMOVAL DATE | EXPOSURE DATE | COPPER MG/L | CADMIUM MG/L | FREE H+ MG/L |
| MAY 21,85 | APR 23,85 | 0.0004 | UG 0.00019 | 0.0407 |
| JUN 18,85 | MAY 21,85 | < 0.0003 | 0.00002 | 0.0240 |
| JUL 16,85 | JUN 18,85 | 0.0024 | 0.00009 | 0.0501 |
| AUG 13,85 | JUL 16,85 | 0.0029 | UG 0.00046 | 0.0372 |
| SEP 10,85 | AUG 13,85 | 0.0003 | 0.00002 | 0.0219 |
| OCT 8,85 | SEP 10,85 | 0.0007 | 0.00005 | 0.0302 |
| NOV 5,85 | OCT 8,85 | 0.0002 | 0.00005 | 0.0372 |

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ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : PICKLE LAKE/CUMULATIVE PRECIP.

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PAGE : 1

| REMOVAL DATE | EXPOSURE DATE | SAMPLING START HR. | END HR. | SAMPLE TYPE 01-RAIN 02-SNOW 03-COMP/04-OTHER | GAUGE DEPTH(MM) | GAUGE TYPE 02,03-APIOS 09-AES | SAMPLE NUMBER | PROJECT CODE 02-APIOS 03-SPECIAL | SUBPROJECT CODE 01-MOE 03-AES | SAMPLER EFFICI- ENCY (%) | COMMENTS FIELD OFFICE |
|-----------------|------------------|--------------------------|------------|--|--------------------|--|------------------|---|--|-----------------------------------|--------------------------|
| JAN 29,85 | JAN 2,85 | 1415 | 1215 | 2 | 173.2 | 2 | 13825 | 2 | 1 | U 7 | FJ |
| FEB 26,85 | JAN 29,85 | 1230 | 1120 | 2 | 10.8 | 2 | 13826 | 2 | 1 | U 95 | FJ H |
| MAR 26,85 | FEB 26,85 | 1140 | 1000 | 2 | 16.0 | 2 | 13827 | 2 | 1 | U 38 | FJ |
| APR 23,85 | MAR 26,85 | 1000 | 1230 | 3 | 95.2 | 2 | 13828 | 2 | 1 | 68 | |
| MAY 27,85 | APR 23,85 | 1730 | 1615 | 3 | 137.4 | 1 | 13830 | 2 | 1 | 64 | C HM |
| JUN 26,85 | MAY 27,85 | 1615 | 1915 | 3 | 122.0 | 3 | 34898 | 2 | 1 | U 58 | CG H |
| JUL 16,85 | JUN 26,85 | 1915 | 1920 | 1 | 48.0 | 3 | 13831 | 2 | 1 | 77 | BCA |
| AUG 13,85 | JUL 16,85 | 1920 | 1915 | 1 | 94.0 | 3 | 13833 | 2 | 1 | 74 | C H |
| SEP 10,85 | AUG 13,85 | 1415 | 1330 | 1 | 120.0 | 3 | 13834 | 2 | 1 | 85 | CD |
| OCT 8,85 | SEP 10,85 | 1330 | 1430 | 1 | 134.7 | 3 | 13835 | 2 | 1 | 85 | CD H |
| NOV 5,85 | OCT 8,85 | 1430 | 1430 | 3 | 35.2 | 2 | 13836 | 2 | 1 | U 79 | GCQ |
| DEC 3,85 | NOV 5,85 | 1430 | 1430 | 2 | 67.9 | 2 | 13837 | 2 | 1 | U 5 | CG CM |
| DEC 31,85 | DEC 3,85 | 1430 | 1430 | 2 | 18.3 | 9 | 13838 | 2 | 1 | I 110 | C NC |

| REMOVAL DATE | EXPOSURE DATE | VOLUME ML | CONDUCT. UMHO/CM | PH LAB | TOTAL H+ GRAM MG/L | SULPHATE MG/L | NITRATE AS N MG/L | CALCIUM MG/L |
|-----------------|------------------|--------------|---------------------|-----------|--------------------------|------------------|-------------------------|-----------------|
| JAN 29,85 | JAN 2,85 | 396.0 | 6.7 | 5.00 | 0.0272 | 0.55 | 0.08 | 0.11 |
| FEB 26,85 | JAN 29,85 | 334.0 | 10.0 | 4.91 | 0.0361 | 0.75 | 0.21 | 0.20 |
| MAR 26,85 | FEB 26,85 | 202.0 | 8.4 | B 6.23 | LG 0.0170 | 1.05 | 0.30 | UG 0.62 |
| APR 23,85 | MAR 26,85 | 2128.0 | 9.0 | 5.07 | 0.0295 | 1.15 | 0.15 | 0.19 |
| MAY 27,85 | APR 23,85 | 2877.0 | 6.5 | 5.17 | 0.0266 | 0.70 | LG 0.07 | 0.19 |
| JUN 26,85 | MAY 27,85 | 2330.0 | 8.2 | U 7.42 | LG 0.0109 | 0.75 | 0.09 | UG 1.67 |
| JUL 16,85 | JUN 26,85 | 1210.0 | 10.4 | 4.72 | 0.0428 | 1.05 | 0.10 | 0.15 |
| AUG 13,85 | JUL 16,85 | 2265.0 | 6.5 | 5.36 | 0.0223 | 0.90 | 0.17 | 0.19 |
| SEP 10,85 | AUG 13,85 | 3341.0 | 7.2 | 5.10 | 0.0301 | 0.60 | 0.14 | 0.10 |
| OCT 8,85 | SEP 10,85 | 3751.0 | 4.1 | 5.24 | 0.0253 | LG 0.35 | <T 0.05 | 0.08 |
| NOV 5,85 | OCT 8,85 | 913.0 | 10.9 | 4.87 | 0.0350 | 0.95 | 0.17 | 0.12 |
| DEC 3,85 | NOV 5,85 | 113.0 | 5.8 | 5.21 | 0.0252 | 0.35 | <T 0.05 | 0.08 |
| DEC 31,85 | DEC 3,85 | 659.0 | 5.8 | D 5.37 | 0.0228 | 0.40 | 0.07 | 0.09 |

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : PICKLE LAKE/CUMULATIVE PRECIP.

#36

PAGE : 2

| REMOVAL DATE | EXPOSURE DATE | CHLORIDE MG/L | KJELDAHL AS N MG/L | MAGNESIM MG/L | POTASSIM MG/L | SODIUM MG/L | AMMONIUM AS N MG/L | PHOSPHOR MG/L |
|-----------------|------------------|------------------|--------------------------|------------------|------------------|----------------|--------------------------|------------------|
| JAN 29,85 | JAN 2,85 | 0.15 | 0.12 | <T 0.010 | <T 0.020 | 0.110 | <T 0.010 | 0.017 |
| FEB 26,85 | JAN 29,85 | 0.31 | 0.17 | 0.030 | D 0.050 | 0.310 | 0.085 | 0.017 |
| MAR 26,85 | FEB 26,85 | 0.35 | 0.38 | 0.125 | 0.065 | 0.300 | 0.100 | 0.027 |
| APR 23,85 | MAR 26,85 | 0.09 | 0.28 | 0.020 | 0.030 | 0.080 | 0.245 | <T 0.003 |
| MAY 27,85 | APR 23,85 | <W 0.01 | 0.29 | 0.030 | 0.050 | 0.035 | 0.185 | <T 0.005 |
| JUN 26,85 | MAY 27,85 | 0.07 | 0.54 | UG 0.255 | 0.115 | 0.050 | LG 0.030 | 0.063 |
| JUL 16,85 | JUN 26,85 | <T 0.06 | 0.23 | 0.030 | 0.050 | 0.035 | LG 0.055 | 0.010 |
| AUG 13,85 | JUL 16,85 | <T 0.04 | 0.39 | 0.030 | 0.045 | 0.030 | 0.265 | 0.015 |
| SEP 10,85 | AUG 13,85 | 0.22 | 0.18 | <T 0.010 | <T 0.015 | 0.025 | 0.140 | <T 0.003 |
| OCT 8,85 | SEP 10,85 | <T 0.05 | <T 0.06 | <T 0.005 | <T 0.015 | <T 0.005 | LG 0.040 | <T 0.004 |
| NOV 5,85 | OCT 8,85 | 0.08 | 0.23 | 0.020 | 0.045 | 0.065 | 0.145 | 0.007 |
| DEC 3,85 | NOV 5,85 | <T 0.04 | 0.22 | 0.015 | <T 0.020 | 0.040 | <W 0.005 | 0.025 |
| DEC 31,85 | DEC 3,85 | 0.18 | 0.11 | 0.040 | 0.035 | 0.110 | <W 0.005 | 0.007 |

| REMOVAL DATE | EXPOSURE DATE | MANGANSE MG/L | NICKEL MG/L | ZINC MG/L | IRON MG/L | LEAD MG/L | VANADIUM MG/L | ALUMINUM MG/L |
|-----------------|------------------|------------------|----------------|--------------|--------------|--------------|------------------|------------------|
| JAN 29,85 | JAN 2,85 | 0.002 | 0.0044 | 0.006 | 0.082 | 0.010 | < 0.0004 | 0.030 |
| FEB 26,85 | JAN 29,85 | 0.003 | 0.0007 | 0.007 | 0.038 | UG 0.014 | < 0.0004 | 0.047 |
| MAR 26,85 | FEB 26,85 | 0.010 | < 0.0002 | UG 0.029 | UG 0.179 | 0.006 | 0.0007 | 0.164 |
| APR 23,85 | MAR 26,85 | 0.002 | < 0.0002 | 0.002 | 0.044 | 0.008 | < 0.0004 | 0.036 |
| MAY 27,85 | APR 23,85 | 0.003 | 0.0005 | 0.002 | 0.032 | 0.002 | < 0.0004 | 0.047 |
| JUN 26,85 | MAY 27,85 | UG 0.041 | 0.0013 | 0.002 | UG 0.392 | 0.001 | 0.0014 | 0.234 |
| JUL 16,85 | JUN 26,85 | 0.004 | < 0.0002 | 0.004 | 0.034 | 0.003 | < 0.0004 | 0.039 |
| AUG 13,85 | JUL 16,85 | D 0.005 | 0.0003 | 0.002 | 0.042 | 0.001 | < 0.0004 | 0.022 |
| SEP 10,85 | AUG 13,85 | 0.001 | < 0.0002 | 0.001 | 0.003 | 0.002 | < 0.0004 | 0.025 |
| OCT 8,85 | SEP 10,85 | < 0.001 | < 0.0002 | < 0.001 | 0.008 | 0.002 | < 0.0004 | 0.008 |
| NOV 5,85 | OCT 8,85 | 0.001 | 0.0003 | 0.003 | 0.011 | 0.005 | < 0.0004 | 0.027 |
| DEC 3,85 | NOV 5,85 | ***** | ***** | ***** | ***** | ***** | ***** | ***** |
| DEC 31,85 | DEC 3,85 | 0.001 | < 0.0002 | 0.005 | 0.021 | < 0.003 | < 0.0004 | 0.028 |

ONTARIO MINISTRY OF THE ENVIRONMENT
 CUMULATIVE SAMPLING ANALYSIS RESULTS
 APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : PICKLE LAKE/CUMULATIVE PRECIP.

#36

PAGE : 3

| REMOVAL DATE | EXPOSURE DATE | COPPER MG/L | CADMIUM MG/L | FREE H+ MG/L |
|-----------------|------------------|----------------|-----------------|-----------------|
| JAN 29,85 | JAN 2,85 | 0.0013 | 0.00012 | 0.0100 |
| FEB 26,85 | JAN 29,85 | 0.0032 | 0.00006 | 0.0123 |
| MAR 26,85 | FEB 26,85 | 0.0043 | 0.00007 | B 0.0006 |
| APR 23,85 | MAR 26,85 | 0.0009 | 0.00007 | 0.0085 |
| MAY 27,85 | APR 23,85 | < 0.0003 | 0.00009 | 0.0068 |
| JUN 26,85 | MAY 27,85 | 0.0008 | 0.00003 | U 0.0000 |
| JUL 16,85 | JUN 26,85 | 0.0009 | 0.00008 | 0.0191 |
| AUG 13,85 | JUL 16,85 | 0.0005 | < 0.00002 | 0.0044 |
| SEP 10,85 | AUG 13,85 | 0.0003 | < 0.00002 | 0.0079 |
| OCT 8,85 | SEP 10,85 | 0.0005 | < 0.00002 | 0.0058 |
| NOV 5,85 | OCT 8,85 | B 0.0302 | 0.00006 | 0.0135 |
| DEC 3,85 | NOV 5,85 | ***** | ***** | 0.0062 |
| DEC 31,85 | DEC 3,85 | 0.0016 | 0.00006 | D 0.0043 |

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : QUETICO CENTRE/CUMULATIVE PRECIP. #32

PAGE : 1

| REMOVAL DATE | EXPOSURE DATE | SAMPLING START HR. | SAMPLING END HR. | SAMPLE TYPE 01-RAIN 02-SNOW 03-COMP/04-OTHER | GAUGE DEPTH(MM) | GAUGE TYPE 02,03-APIOS 09-AES | SAMPLE NUMBER | PROJECT CODE 02-APIOS 03-SPECIAL | SUBPROJECT CODE 01-MOE 03-AES | SAMPLER EFFICI- ENCY (%) | COMMENTS FIELD OFFICE |
|-----------------|------------------|--------------------------|------------------------|--|--------------------|--|------------------|---|--|-----------------------------------|--------------------------|
| JAN 29,85 | JAN 2,85 | 900 | 900 | 2 | 18.8 | 9 | 95268 | 2 | 1 | I 78 | C |
| FEB 26,85 | JAN 29,85 | 900 | 900 | 2 | 8.9 | 2 | 95269 | 2 | 1 | 164 | N |
| MAR 26,85 | FEB 26,85 | 900 | 900 | 2 | 38.6 | 2 | 95270 | 2 | 1 | 25 | C N |
| APR 24,85 | MAR 26,85 | 900 | 900 | 3 | 62.3 | 2 | 95271 | 2 | 1 | 100 | Q |
| MAY 14,85 | APR 24,85 | 900 | 900 | 3 | 58.0 | 2 | 95276 | 2 | 1 | 91 | AC H |
| MAY 22,85 | MAY 14,85 | 900 | 900 | 1 | 59.1 | 9 | 95277 | 2 | 1 | I 31 | AC N |
| JUN 18,85 | MAY 22,85 | 900 | 900 | 1 | 74.0 | 1 | 95278 | 2 | 1 | 95 | |
| JUL 16,85 | JUN 18,85 | 900 | 1030 | 1 | 158.0 | 3 | 95279 | 2 | 1 | 95 | AC H |
| AUG 13,85 | JUL 16,85 | 1030 | 800 | 1 | 146.0 | 3 | 95280 | 2 | 1 | 90 | C H |
| SEP 10,85 | AUG 13,85 | 800 | 800 | 1 | 60.0 | 3 | 95281 | 2 | 1 | U 84 | G |
| OCT 8,85 | SEP 10,85 | 800 | 800 | 1 | 211.0 | 9 | 95282 | 2 | 1 | I 83 | B N |
| NOV 5,85 | OCT 8,85 | 800 | 1100 | 3 | 72.6 | 3 | 95283 | 2 | 1 | 31 | C N |
| DEC 3,85 | NOV 5,85 | 1100 | 1300 | 2 | 24.0 | 2 | 95284 | 2 | 1 | 114 | C N |
| DEC 31,85 | DEC 3,85 | 1300 | 900 | 2 | 23.4 | 2 | 95285 | 2 | 1 | 13 | |

| REMOVAL DATE | EXPOSURE DATE | VOLUME ML | CONDUCT. UMHO/CM | PH LAB | TOTAL H+ GRAN MG/L | SULPHATE MG/L | NITRATE AS N MG/L | CALCIUM MG/L |
|-----------------|------------------|--------------|---------------------|-----------|--------------------------|------------------|-------------------------|-----------------|
| JAN 29,85 | JAN 2,85 | 479.0 | 8.6 | 4.92 | 0.0312 | 0.55 | 0.17 | 0.10 |
| FEB 26,85 | JAN 29,85 | 476.0 | 16.7 | 4.54 | 0.0575 | 1.00 | 0.44 | 0.11 |
| MAR 26,85 | FEB 26,85 | 316.0 | 7.6 | 5.14 | 0.0275 | 0.60 | 0.19 | 0.24 |
| APR 24,85 | MAR 26,85 | 2034.0 | 10.9 | 5.23 | 0.0304 | 1.60 | 0.25 | 0.26 |
| MAY 14,85 | APR 24,85 | 1718.0 | 12.1 | UG 6.12 | 0.0297 | 1.80 | 0.39 | UG 0.62 |
| MAY 22,85 | MAY 14,85 | 598.0 | ***** | 4.77 | UG 0.0571 | ***** | ***** | ***** |
| JUN 18,85 | MAY 22,85 | 2297.0 | 8.6 | UG 6.50 | 0.0205 | 1.15 | 0.23 | 0.43 |
| JUL 16,85 | JUN 18,85 | 4911.0 | 8.7 | D 6.14 | 0.0216 | 1.20 | 0.23 | 0.41 |
| AUG 13,85 | JUL 16,85 | 4281.0 | 9.1 | 4.83 | 0.0332 | 1.00 | 0.17 | 0.21 |
| SEP 10,85 | AUG 13,85 | 1640.0 | 15.0 | 4.77 | 0.0413 | 1.55 | 0.33 | D 0.27 |
| OCT 8,85 | SEP 10,85 | 5700.0 | 6.4 | 5.15 | 0.0299 | 0.70 | 0.12 | 0.11 |
| NOV 5,85 | OCT 8,85 | 734.0 | 14.6 | 4.81 | 0.0398 | D 1.60 | 0.27 | 0.22 |
| DEC 3,85 | NOV 5,85 | 889.0 | 8.7 | 5.13 | 0.0287 | 0.65 | 0.21 | 0.13 |
| DEC 31,85 | DEC 3,85 | 104.0 | 14.8 | 4.77 | 0.0471 | 0.95 | 0.41 | 0.31 |

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : QUETICO CENTRE/CUMULATIVE PRECIP. #32

PAGE : 2

| REMOVAL DATE | EXPOSURE DATE | CHLORIDE MG/L | KJELDAHL AS N MG/L | MAGNESIUM MG/L | POTASSIUM MG/L | SODIUM MG/L | AMMONIUM AS N MG/L | PHOSPHOR MG/L |
|-----------------|------------------|------------------|--------------------------|-------------------|-------------------|----------------|--------------------------|------------------|
| JAN 29,85 | JAN 2,85 | 0.13 | 0.10 | <T 0.010 | <W 0.005 | 0.065 | 0.040 | 0.016 |
| FEB 26,85 | JAN 29,85 | 0.16 | 0.30 | <T 0.010 | 0.020 | 0.125 | 0.230 | 0.017 |
| MAR 26,85 | FEB 26,85 | 0.15 | 0.39 | 0.030 | 0.025 | 0.115 | 0.090 | 0.033 |
| APR 24,85 | MAR 26,85 | 0.13 | 0.68 | 0.030 | 0.050 | 0.085 | 0.450 | 0.026 |
| MAY 14,85 | APR 24,85 | 0.14 | 1.00 | 0.085 | 0.045 | 0.085 | 0.635 | 0.027 |
| MAY 22,85 | MAY 14,85 | ***** | ***** | ***** | ***** | ***** | ***** | ***** |
| JUN 18,85 | MAY 22,85 | D 0.17 | 0.70 | 0.070 | 0.060 | 0.060 | 0.360 | 0.010 |
| JUL 16,85 | JUN 18,85 | 0.15 | 0.69 | 0.060 | 0.065 | 0.050 | 0.440 | 0.014 |
| AUG 13,85 | JUL 16,85 | 0.07 | 0.06 | 0.020 | <T 0.010 | 0.040 | 0.195 | <T 0.003 |
| SEP 10,85 | AUG 13,85 | 0.18 | 0.44 | D 0.045 | D 0.075 | 0.045 | 0.355 | 0.004 |
| OCT 8,85 | SEP 10,85 | <T 0.05 | 0.17 | <T 0.010 | 0.025 | 0.045 | 0.140 | <T 0.004 |
| NOV 5,85 | OCT 8,85 | 0.08 | 0.40 | 0.040 | <T 0.015 | 0.075 | 0.280 | 0.014 |
| DEC 3,85 | NOV 5,85 | 0.09 | 0.21 | 0.015 | 0.085 | 0.050 | 0.120 | 0.008 |
| DEC 31,85 | DEC 3,85 | 0.38 | 0.24 | 0.050 | <T 0.010 | 0.330 | <W 0.005 | 0.053 |

| REMOVAL DATE | EXPOSURE DATE | MANGANESE MG/L | NICKEL MG/L | ZINC MG/L | IRON MG/L | LEAD MG/L | VANADIUM MG/L | ALUMINUM MG/L |
|-----------------|------------------|-------------------|----------------|--------------|--------------|--------------|------------------|------------------|
| JAN 29,85 | JAN 2,85 | 0.002 | 0.0002 | < 0.006 | 0.028 | 0.002 | < 0.0004 | 0.038 |
| FEB 26,85 | JAN 29,85 | 0.002 | 0.0006 | 0.004 | 0.053 | 0.004 | < 0.0004 | 0.059 |
| MAR 26,85 | FEB 26,85 | 0.005 | 0.0006 | D 0.007 | 0.105 | 0.005 | < 0.0004 | 0.105 |
| APR 24,85 | MAR 26,85 | 0.003 | 0.0002 | 0.003 | 0.049 | 0.009 | < 0.0004 | 0.053 |
| MAY 14,85 | APR 24,85 | 0.012 | 0.0008 | 0.005 | UB 0.166 | 0.002 | 0.0004 | 0.161 |
| MAY 22,85 | MAY 14,85 | ***** | ***** | ***** | ***** | ***** | ***** | ***** |
| JUN 18,85 | MAY 22,85 | 0.008 | D 0.0010 | 0.001 | 0.033 | < 0.001 | < 0.0004 | 0.051 |
| JUL 16,85 | JUN 18,85 | 0.007 | 0.0003 | 0.003 | 0.070 | 0.001 | < 0.0004 | 0.091 |
| AUG 13,85 | JUL 16,85 | 0.002 | < 0.0002 | 0.001 | 0.017 | 0.002 | < 0.0004 | 0.018 |
| SEP 10,85 | AUG 13,85 | D 0.004 | < 0.0002 | 0.002 | 0.039 | 0.002 | < 0.0004 | 0.047 |
| OCT 8,85 | SEP 10,85 | 0.001 | < 0.0002 | 0.001 | 0.008 | 0.001 | < 0.0004 | 0.012 |
| NOV 5,85 | OCT 8,85 | 0.004 | 0.0004 | 0.005 | 0.034 | 0.003 | < 0.0004 | 0.041 |
| DEC 3,85 | NOV 5,85 | 0.002 | < 0.0002 | 0.008 | 0.018 | < 0.002 | < 0.0004 | 0.016 |
| DEC 31,85 | DEC 3,85 | ***** | ***** | ***** | ***** | ***** | ***** | ***** |

ONTARIO MINISTRY OF THE ENVIRONMENT
 CUMULATIVE SAMPLING ANALYSIS RESULTS
 APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : QUETICO CENTRE/CUMULATIVE PRECIP. #32

PAGE : 3

| REMOVAL DATE | EXPOSURE DATE | COPPER MG/L | CADMIUM MG/L | FREE H+ MG/L |
|-----------------|------------------|----------------|-----------------|-----------------|
| JAN 29,85 | JAN 2,85 | < 0.0006 | 0.00004 | 0.0120 |
| FEB 26,85 | JAN 29,85 | 0.0005 | 0.00003 | 0.0288 |
| MAR 26,85 | FEB 26,85 | 0.0024 | 0.00005 | 0.0072 |
| APR 24,85 | MAR 26,85 | 0.0014 | 0.00008 | 0.0059 |
| MAY 14,85 | APR 24,85 | 0.0005 | 0.00012 | LG 0.0008 |
| MAY 22,85 | MAY 14,85 | ***** | ***** | 0.0170 |
| JUN 18,85 | MAY 22,85 | 0.0007 | 0.00005 | LG 0.0003 |
| JUL 16,85 | JUN 18,85 | 0.0016 | 0.00005 | D 0.0007 |
| AUG 13,85 | JUL 16,85 | < 0.0002 | < 0.00002 | 0.0148 |
| SEP 10,85 | AUG 13,85 | 0.0008 | 0.00003 | 0.0170 |
| OCT 8,85 | SEP 10,85 | 0.0002 | 0.00003 | 0.0071 |
| NOV 5,85 | OCT 8,85 | 0.0016 | 0.00006 | 0.0155 |
| DEC 3,85 | NOV 5,85 | 0.0008 | 0.00008 | 0.0074 |
| DEC 31,85 | DEC 3,85 | ***** | ***** | 0.0170 |

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : WINISK/CUMULATIVE PRECIP.

#29

PAGE : 1

| REMOVAL DATE | EXPOSURE DATE | SAMPLING START HR. | SAMPLING END HR. | SAMPLE TYPE 01-RAIN 02-SNOW 03-COMP/04-OTHER | GAUGE DEPTH(MM) | GAUGE TYPE 02,03-APIOS 09-AES | SAMPLE NUMBER | PROJECT CODE 02-APIOS 03-SPECIAL | SUBPROJECT CODE 01-MOE 03-AES | SAMPLER EFFICI- ENCY (%) | COMMENTS FIELD OFFICE |
|-----------------|------------------|--------------------------|------------------------|--|--------------------|--|------------------|---|--|-----------------------------------|--------------------------|
| JAN 28,85 | DEC 18,84 | 2230 | 1430 | 2 | ***** | 9 | 35325 | 2 | 1 | *** | N |
| FEB 26,85 | JAN 28,85 | 1430 | 800 | 2 | 13.8 | 9 | 35374 | 2 | 1 | I 32 | HM |
| MAR 28,85 | FEB 26,85 | 800 | 800 | 3 | 32.0 | 9 | 35401 | 2 | 1 | I 22 | |
| SEP 17,85 | MAR 28,85 | 800 | 1140 | 1 | 396.3 | 9 | 35587 | 2 | 1 | U 50 | ACDFJQ C |
| OCT 8,85 | SEP 17,85 | 1140 | 930 | 1 | 114.8 | 9 | 35606 | 2 | 1 | I 42 | ACD |
| NOV 4,85 | OCT 8,85 | 930 | 1200 | 3 | 47.6 | 9 | 35652 | 2 | 1 | I 100 | BC MC |
| DEC 3,85 | NOV 4,85 | 1200 | 1000 | 2 | 18.2 | 9 | 35686 | 2 | 1 | I 35 | C |
| JAN 3,86 | DEC 3,85 | 1000 | 1100 | 2 | 27.9 | 9 | 35712 | 2 | 1 | I 23 | N |

| REMOVAL DATE | EXPOSURE DATE | VOLUME ML | CONDUCT. UMHO/CM | PH LAB | TOTAL H+ GRAN MG/L | SULPHATE MG/L | NITRATE AS N MG/L | CALCIUM MG/L |
|-----------------|------------------|--------------|---------------------|-----------|--------------------------|------------------|-------------------------|-----------------|
| JAN 28,85 | DEC 18,84 | 350.0 | 10.0 | 5.16 | 0.0239 | 0.85 | 0.13 | 0.37 |
| FEB 26,85 | JAN 28,85 | 145.0 | 21.8 | 6.87 | 0.0194 | 1.40 | <T 0.03 | UG 1.41 |
| MAR 28,85 | FEB 26,85 | 233.0 | 11.5 | 6.18 | 0.0184 | 0.95 | 0.13 | 0.48 |
| SEP 17,85 | MAR 28,85 | U 6473.0 | U 10.7 | U 6.75 | U 0.0253 | U 1.50 | U 0.01 | U 0.66 |
| OCT 8,85 | SEP 17,85 | 1596.0 | 22.4 | 5.19 | 0.0304 | 1.40 | <W 0.01 | 0.34 |
| NOV 4,85 | OCT 8,85 | 1559.0 | 15.1 | 5.65 | 0.0232 | 1.05 | 0.08 | 0.35 |
| DEC 3,85 | NOV 4,85 | 210.0 | 13.3 | 6.90 | 0.0183 | 1.00 | <W 0.01 | 0.42 |
| JAN 3,86 | DEC 3,85 | 212.0 | 18.0 | 5.95 | 0.0165 | 0.80 | 0.09 | 0.36 |

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : WINISK/CUMULATIVE PRECIP.

#29

PAGE : 2

| REMOVAL DATE | EXPOSURE DATE | CHLORIDE MG/L | KJELDAHL AS N MG/L | MAGNESIUM MG/L | POTASSIUM MG/L | SODIUM MG/L | AMMONIUM AS N MG/L | PHOSPHOR MG/L |
|-----------------|------------------|------------------|--------------------------|-------------------|-------------------|----------------|--------------------------|------------------|
| JAN 28,85 | DEC 18,84 | 1.03 | 0.12 | 0.130 | 0.025 | 0.520 | 0.045 | 0.011 |
| FEB 26,85 | JAN 28,85 | 3.84 | 0.22 | UG 0.555 | 0.155 | 2.200 | <W 0.005 | 0.028 |
| MAR 28,85 | FEB 26,85 | 1.52 | UG 0.45 | 0.185 | <W 0.005 | 0.900 | <W 0.005 | 0.032 |
| SEP 17,85 | MAR 28,85 | U 0.41 | U 1.85 | U 0.155 | U 0.105 | U 0.305 | U 0.275 | U 0.185 |
| OCT 8,85 | SEP 17,85 | UG 4.15 | 0.16 | 0.290 | 0.130 | UG 2.250 | <W 0.005 | 0.017 |
| NOV 4,85 | OCT 8,85 | 2.01 | LG 0.06 | 0.160 | 0.065 | 1.320 | <W 0.005 | 0.009 |
| DEC 3,85 | NOV 4,85 | 2.22 | 0.10 | 0.155 | 0.075 | 1.650 | <T 0.005 | 0.023 |
| JAN 3,86 | DEC 3,85 | 3.08 | 0.11 | 0.215 | 0.070 | 1.630 | <T 0.010 | 0.024 |

| REMOVAL DATE | EXPOSURE DATE | MANGANESE MG/L | NICKEL MG/L | ZINC MG/L | IRON MG/L | LEAD MG/L | VANADIUM MG/L | ALUMINUM MG/L |
|-----------------|------------------|-------------------|----------------|--------------|--------------|--------------|------------------|------------------|
| JAN 28,85 | DEC 18,84 | 0.002 | 0.0004 | 0.015 | 0.108 | 0.011 | < 0.0004 | UG 0.194 |
| FEB 26,85 | JAN 28,85 | ***** | ***** | ***** | ***** | ***** | ***** | ***** |
| MAR 28,85 | FEB 26,85 | UG 0.008 | 0.0005 | UG 0.110 | UG 0.543 | 0.010 | 0.0006 | UG 0.099 |
| SEP 17,85 | MAR 28,85 | U 0.004 | U 0.0003 | U 0.006 | U 0.077 | U 0.002 | U 0.0004 | U 0.067 |
| OCT 8,85 | SEP 17,85 | 0.001 | 0.0005 | 0.002 | 0.012 | 0.002 | < 0.0004 | 0.018 |
| NOV 4,85 | OCT 8,85 | 0.002 | 0.0002 | 0.002 | 0.028 | 0.010 | < 0.0004 | 0.024 |
| DEC 3,85 | NOV 4,85 | 0.001 | 0.0003 | 0.008 | 0.040 | 0.004 | < 0.0004 | 0.049 |
| JAN 3,86 | DEC 3,85 | 0.001 | 0.0002 | 0.006 | 0.033 | 0.005 | < 0.0004 | 0.040 |

ONTARIO MINISTRY OF THE ENVIRONMENT
 CUMULATIVE SAMPLING ANALYSIS RESULTS
 APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : MINISK/CUMULATIVE PRECIP.

#29

PAGE : 3

| REMOVAL DATE | EXPOSURE DATE | COPPER MG/L | CADMIUM MG/L | FREE H+ MG/L |
|-----------------|------------------|----------------|-----------------|-----------------|
| JAN 28,85 | DEC 18,84 | 0.0037 | 0.00050 | 0.0069 |
| FEB 26,85 | JAN 28,85 | ***** | ***** | 0.0001 |
| MAR 28,85 | FEB 26,85 | UG 0.0093 | 0.00019 | 0.0007 |
| SEP 17,85 | MAR 28,85 | U 0.0021 | U 0.00007 | U 0.0002 |
| OCT 8,85 | SEP 17,85 | 0.0012 | 0.00003 | 0.0065 |
| NOV 4,85 | OCT 8,85 | 0.0012 | 0.00002 | 0.0022 |
| DEC 3,85 | NOV 4,85 | 0.0009 | 0.00005 | 0.0001 |
| JAN 3,86 | DEC 3,85 | 0.0011 | 0.00006 | 0.0011 |



(16123)

TD/196/A25/A4/1985/MOE/APIOS

TD 196/A25 A4/1985/MOE/APIOS
Ontario Ministry of the En
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